

Requester's Full Name: CARRILLO Examiner #: 72492 Date: 5/1/03
Art Unit: 1746 Phone Number 308-1876 Serial Number: 09/231186
Mail Box and Bldg/Room Location: CP3-7812 Results Format Preferred (circle): PAPER DISK

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the conceality of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Method for removing oxide & coatings from a substrate
Inventors (please provide full names): Lawrence Kool, James Ruud
Earliest Priority Filing Date: 1/29/01

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with appropriate serial number.

(remove
dissolve
clean?
etch?
strip
eliminate)

(oxide
or
metal oxide
or
coating or film or
layer)

(substrate or
metal or
gas turbine
or turbine
or airfoil or
turbine airfoil,

using the claimed composition
Results needed by Monday 5/5/03
Please note attached page of specification
which defines precursors of the acid.
Independent claims 1, 23, 24, 27

Kathleen,
I left a phone
message for you
142330

STAFF USE ONLY
Searcher: K. Fuller Type of Search
Searcher Phone #: _____ NA Sequence (#) _____
Searcher Location: _____ AA Sequence (#) _____
Date Searcher Picked Up: _____ Structure (#) 1
Date Completed: 5/2/03 Bibliographic ✓
Searcher Prep & Review Time: 40 Litigation _____
Clerical Review: _____ Fulltext _____

Vendors and cost where applicable
STN ✓
Dialog _____
Questel/Orbit _____
Dr. Link _____
Lexis/Nexis _____

=> FILE HCAPLUS

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FILE COVERS 1907 - 2 May 2003 VOL 138 ISS 19

FILE LAST UPDATED: 1 May 2003 (20030501/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> D QUE

L3 14 SEA FILE=REGISTRY ABB=ON (10034-85-2/BI OR 10035-10-6/BI OR 12021-95-3/BI OR 13598-36-2/BI OR 16950-43-9/BI OR 16961-83-4/B I OR 17439-11-1/BI OR 6303-21-5/BI OR 64-19-7/BI OR 7601-90-3/B I OR 7647-01-0/BI OR 7664-38-2/BI OR 7664-93-9/BI OR 7697-37-2/BI)

L4 3 SEA FILE=REGISTRY ABB=ON L3 AND (1/TI OR 1/SI OR 1/GE)

L6 197 SEA FILE=REGISTRY ABB=ON (H(L) (SI OR GE OR TI OR GA) (L) F) /ELS (L) 3/ELC.SUB

L8 1 SEA FILE=REGISTRY ABB=ON "HYDROGEN FLUORIDE"/CN

L9 1 SEA FILE=REGISTRY ABB=ON "SILICON DIOXIDE"/CN

L10 2 SEA FILE=REGISTRY ABB=ON "GERMANIUM OXIDE"/CN

L11 2 SEA FILE=REGISTRY ABB=ON "TITANIUM OXIDE"/CN

L12 2 SEA FILE=REGISTRY ABB=ON "GALLIUM OXIDE"/CN

L14 197 SEA FILE=REGISTRY ABB=ON L6 OR L4

L15 3095 SEA FILE=HCAPLUS ABB=ON L14

L17 254 SEA FILE=HCAPLUS ABB=ON L15 AND ?OXIDE? AND (REMOV? OR DISSOL? OR CLEAN? OR ETHCH? OR STRIP? OR ELIMIN? OR PICKL?)

L18 138366 SEA FILE=HCAPLUS ABB=ON OXIDES/IT

L19 3150 SEA FILE=HCAPLUS ABB=ON L18 (L) REM/RL

L20 2 SEA FILE=HCAPLUS ABB=ON L17 AND L19

L22 76 SEA FILE=HCAPLUS ABB=ON L15 AND ?OXIDE? (5A) (REMOV? OR DISSOL? OR CLEAN? OR ETHCH? OR STRIP? OR ELIMIN? OR PICKL?)

L23 31 SEA FILE=HCAPLUS ABB=ON L22 AND (SUBSTRATE? OR METAL? OR TURBINE? OR AIRFOIL?)

L24 2 SEA FILE=HCAPLUS ABB=ON L15 AND L19

L25 4829 SEA FILE=HCAPLUS ABB=ON L15 OR H2SIF6 OR H2GEF6 OR H2TIF6 OR H2GAF6 OR FLUORO? (2A) ACID# (2A) (SILICON OR TITANIUM OR GERMANIUM OR GALLIUM OR TI OR SI OR GE OR GA)

L26 117 SEA FILE=HCAPLUS ABB=ON L25 AND (OXIDE? OR COATING# OR FILM# OR LAYER#) (3A) (REMOV? OR DISSOL? OR CLEAN? OR ETHCH? OR STRIP? OR PICKL?)

L27 3 SEA FILE=HCAPLUS ABB=ON L19 AND L26

L28 26 SEA FILE=HCAPLUS ABB=ON L26 AND NONFERROUS METALS/SC, SX

acids

precursors

L29	13	SEA FILE=HCAPLUS ABB=ON	L26 AND REM/RL
L30	2	SEA FILE=HCAPLUS ABB=ON	L23 AND REM/RL
L31	62	SEA FILE=HCAPLUS ABB=ON	L20 OR L23 OR L24 OR (L27 OR L28 OR L29 OR L30)
L32	13	SEA FILE=HCAPLUS ABB=ON	L31 AND REM/RL
L34	33	SEA FILE=HCAPLUS ABB=ON	L31 AND METAL?/SC, SX
L36	25	SEA FILE=HCAPLUS ABB=ON	L31 AND REMOV?/IT
L37	48	SEA FILE=HCAPLUS ABB=ON	L32 OR L34 OR L36
L39	33025	SEA FILE=HCAPLUS ABB=ON	L8
L40	360136	SEA FILE=HCAPLUS ABB=ON	(L9 OR L10 OR L11 OR L12)
L42	6533	SEA FILE=HCAPLUS ABB=ON	L39(L) RCT/RL
L43	14472	SEA FILE=HCAPLUS ABB=ON	L40(L) RCT/RL
L44	309	SEA FILE=HCAPLUS ABB=ON	L42 AND L43
L45	122	SEA FILE=HCAPLUS ABB=ON	L44 AND (?OXIDE? OR COATING# OR FILM# OR LAYER#) (3A) (REMOV? OR DISSOL? OR CLEAN? OR ETCH? OR STRIP? OR ELIMIN? OR PICKL?)
L46	41	SEA FILE=HCAPLUS ABB=ON	L45 AND (SUBSTRATE? OR METAL? OR TURBINE# OR AIRFOIL?)
L47	0	SEA FILE=HCAPLUS ABB=ON	L46 AND PRECURSOR?
L48	0	SEA FILE=HCAPLUS ABB=ON	L45 AND PRECURSOR?
L49	1	SEA FILE=HCAPLUS ABB=ON	L26 AND PRECURSOR?
L51	5	SEA FILE=HCAPLUS ABB=ON	L46 AND (REM/RL OR REMOV?/IT)
L52	3	SEA FILE=HCAPLUS ABB=ON	L45 AND METAL?/SC, SX
L53	3725	SEA FILE=HCAPLUS ABB=ON	L39 AND L40
L54	122	SEA FILE=HCAPLUS ABB=ON	L53 AND PRECURSOR?
L55	49	SEA FILE=HCAPLUS ABB=ON	L54 AND (?OXIDE? OR COATING# OR FILM# OR LAYER#) (3A) (REMOV? OR DISSOL? OR CLEAN? OR ETCH? OR STRIP? OR ELIMIN? OR PICKL?)
L56	1	SEA FILE=HCAPLUS ABB=ON	L19 AND L55
L58	352	SEA FILE=HCAPLUS ABB=ON	L19(L) INORGANIC
L59	10	SEA FILE=HCAPLUS ABB=ON	L53 AND L58
L60	65	SEA FILE=HCAPLUS ABB=ON	L37 OR (L47 OR L48 OR L49) OR L51 OR L52 OR L56 OR L59

=> D ALL 1-65 HITSTR

L60 ANSWER 1 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 2003:260764 HCAPLUS

DN 138:277746

TI Method and apparatus for selectively removing coatings from substrates

IN Kool, Lawrence Bernard; Carl, Ralph James; Wei, Bin; Ruud, James Anthony; Rosenzweig, Mark Alan; Ferrigno, Stephen Joseph

PA USA

SO U.S. Pat. Appl. Publ., 21 pp.
CODEN: USXXCO

DT Patent

LA English

IC ICM C25F005-00

ICS C25F007-00

NCL 205717000; 205722000; 205723000; 204224000R; 204267000; 204272000; 204273000

CC 72-7 (Electrochemistry)

Section cross-reference(s): 56

FAN.CNT 1

PATENT NO.

KIND DATE

APPLICATION NO. DATE

PI US 2003062271 A1 20030403 US 2001-682620 20010928
 PRAI US 2001-682620 20010928

AB An electrochem. stripping method for selectively **removing** at least one **coating** from the surface of a substrate is described. The substrate is immersed in an aq. compn. through which elec. current flows. The compn. includes an acid having the formula H_xAF_6 , in which "A" is Si, Ge, Ti, Zr, Al, or Ga; and x is 1-6. Various **coatings** can be **removed**, such as diffusion or overlay coatings. The method can be used to fully-**strip** a **coating** (e.g., from a turbine component), or to partially strip one sublayer of the coating. Related processes and an app. are also described.

ST electrolyzer selective **removing coating** superalloy turbine blade

IT Coating materials
 (app. for selectively **removing coatings** from substrates)

IT Turbines
 (blades; electrolytic cell for selectively **removing coatings** from)

IT Dissolution
 (electrochem.; app. for selectively **removing coatings** from substrates)

IT Superalloys
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
 (electrolytic cell for selectively **removing coatings** from)

IT Apparatus
 Electrolytic cells
 (for selectively **removing coatings** from substrates)

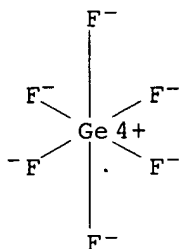
IT cobalt superalloy
 nickel superalloy
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
 (electrolytic cell for selectively **removing coatings** from)

IT 12021-95-3, Zirconate(2-) hexafluoro, dihydrogen **16950-43-9**
16961-83-4, Silicate(2-) hexafluoro, dihydrogen **17439-11-1**
 , Titanate(2-) hexafluoro, dihydrogen **44438-56-4** 51350-73-3,
 Trihydrogen hexafluoroaluminate(3-)
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
 (electrolytic cell for selectively **removing coatings** from substrates in soln. contg.)

IT **16950-43-9** **16961-83-4**, Silicate(2-) hexafluoro, dihydrogen **17439-11-1**, Titanate(2-) hexafluoro, dihydrogen **44438-56-4**
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
 (electrolytic cell for selectively **removing coatings** from substrates in soln. contg.)

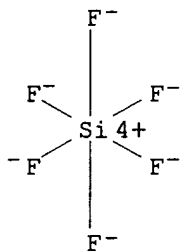
RN 16950-43-9 HCAPLUS

CN Germanate(2-), hexafluoro-, dihydrogen, (OC-6-11)- (9CI) (CA INDEX NAME)



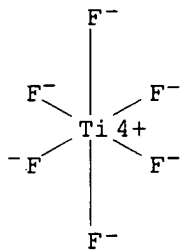
2 H⁺

RN 16961-83-4 HCAPLUS
CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



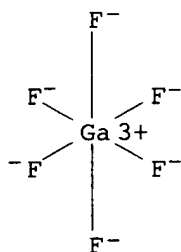
2 H⁺

RN 17439-11-1 HCAPLUS
CN Titanate(2-), hexafluoro-, dihydrogen, (OC-6-11)- (9CI) (CA INDEX NAME)



2 H⁺

RN 44438-56-4 HCAPLUS
CN Gallate(3-), hexafluoro-, trihydrogen, (OC-6-11)- (9CI) (CA INDEX NAME)

●3 H⁺

L60 ANSWER 2 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 2003:172200 HCAPLUS

DN 138:230138

TI Etching residue deposition removal solutions in manufacture of semiconductor devices

IN Shimizu, Koji; Sugiyama, Tsutomu; Miyahara, Kuniaki

PA Showa Denko K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM H01L021-306

ICS C09D009-00; H01L021-3065; H01L021-3213; H01L021-768

CC 76-3 (Electric Phenomena)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003068699	A2	20030307	JP 2001-252481	20010823
PRAI	JP 2001-252481		20010823		

AB The title etching residue removal solns. is an aq. soln. (pH 9-11) contg. (1) a fluoride, (2) an aminoalc. NR₁R₂R₃ (R₁ = -CH₂CH₂OH, -CH₂CHMeOH; R₂ = H C1-4 alkyl, -CH₂HC₂OH, -CH₂CHMeOH; R₃ = H C1-4 alkyl), and (3) an org. solvent. The solns. quickly removes etching residue sidewall deposition without corrosion of **metal** circuits or interlayer materials.

ST fluoride aminoalc org aq soln etching residue removal semiconductor

IT Alcohols, properties

RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(amino, etching residue **removal** solvent; etching residue deposition **removal** solns. in manuf. of semiconductor devices)

IT Semiconductor device fabrication

(etching residue **removal** in; etching residue deposition **removal** solns. in manuf. of semiconductor devices)

IT Fluorides, properties

RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(etching residue **removal** solvent; etching residue deposition **removal** solns. in manuf. of semiconductor devices)

IT Solid wastes

(etching residues, **removal** of; etching residue deposition **removal** solns. in manuf. of semiconductor devices)

IT Etching

Date 11/5

(residues from, **removal** of; etching residue deposition
removal solns. in manuf. of semiconductor devices)

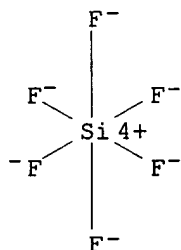
IT Corrosion prevention
(solns.; etching residue deposition **removal** solns. in manuf.
of semiconductor devices)

IT 57-55-6, Propylene glycol, properties 67-63-0, Isopropyl alcohol,
properties 67-68-5, **Dimethylsulfoxide**, properties 68-12-2,
Dimethylformamide, properties 80-73-9, 1,3-Dimethyl-2-imidazolidinone
96-48-0, .gamma.-Butyrolactone 100-37-8, N,N-Diethylmonoethanolamine
105-59-9, N-Methyldiethanolamine 108-01-0, N,N-Dimethylethanolamine
109-83-1, N-Methylmonoethanolamine 111-42-2, Diethanolamine, properties
127-19-5, Dimethylacetamide 141-43-5, Monoethanolamine, properties
288-88-0, 1H-1,2,4-Triazole 872-50-4, N-Methyl-2-pyrrolidone, properties
4402-32-8, N,N-Diethylisopropanolamine 7664-39-3, Hydrogen fluoride,
properties 12125-01-8, Ammonium fluoride (NH₄F) 16919-19-0, Ammonium
hexafluorosilicate ((NH₄)₂SiF₆) **16961-83-4** 34590-94-8,
Dipropylene glycol monomethyl ether 56539-66-3
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(etching residue **removal** solvent; etching residue deposition
removal solns. in manuf. of semiconductor devices)

IT **16961-83-4**
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(etching residue **removal** solvent; etching residue deposition
removal solns. in manuf. of semiconductor devices)

RN 16961-83-4 HCAPLUS

CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



●2 H⁺

L60 ANSWER 3 OF 65 HCAPLUS COPYRIGHT 2003 ACS
AN 2002:752691 HCAPLUS
DN 137:287357
TI Plasma surface treatment of semiconductor substrates
IN Kim, Jeong-Ho; Lee, Gil-Gwang
PA APL Co., Ltd., S. Korea
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01L021-3065
ICS H01L021-304; H05H001-46
CC 76-3 (Electric Phenomena)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002289596	A2	20021004	JP 2002-292	20020107
PRAI	KR 2001-1018	A	20010108		
	KR 2001-79425	A	20011214		
AB	The process includes: (a) forming polymer films on the natural oxide films on Si substrates covered with insulator layers, (b) removal of both the polymer and the oxide films by annealing, and (c) removal of the damaged parts of the substrate surface. The process is employed for etching to form contact holes in the insulator layers, where the unwanted oxide films are formed.				
ST	plasma surface treatment semiconductor substrate; natural oxide polymer film removal annealing				
IT	Plasma Surface treatment (plasma surface treatment of semiconductor substrates)				
IT	Annealing Dielectric films (removal of polymer and oxide films in plasma surface treatment of semiconductor substrates)				
IT	Oxides (inorganic) , processes RL: REM (Removal or disposal) ; PROC (Process) (removal of polymer and oxide films in plasma surface treatment of semiconductor substrates)				
IT	7440-21-3, Silicon, processes RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses) (removal of polymer and oxide films in plasma surface treatment of semiconductor substrates)				
IT	75-46-7, Trifluoromethane 1333-74-0, Hydrogen, reactions 7647-01-0, Hydrochloric acid, reactions 7664-39-3 , Hydrofluoric acid, reactions 7727-37-9, Nitrogen, reactions 10035-10-6, Hydrogen bromide, reactions 10294-34-5, Boron chloride (BCl3) RL: RCT (Reactant); RACT (Reactant or reagent) (removal of polymer and oxide films in plasma surface treatment of semiconductor substrates)				
IT	7631-86-9 , Silica, processes RL: REM (Removal or disposal); PROC (Process) (removal of polymer and oxide films in plasma surface treatment of semiconductor substrates)				
IT	7664-39-3 , Hydrofluoric acid, reactions RL: RCT (Reactant); RACT (Reactant or reagent) (removal of polymer and oxide films in plasma surface treatment of semiconductor substrates)				
RN	7664-39-3 HCAPLUS				
CN	Hydrofluoric acid (8CI, 9CI) (CA INDEX NAME)				
HF					
IT	7631-86-9 , Silica, processes RL: REM (Removal or disposal); PROC (Process) (removal of polymer and oxide films in plasma surface treatment of semiconductor substrates)				
RN	7631-86-9 HCAPLUS				
CN	Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)				

Date NC

O==Si==O

L60 ANSWER 4 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 2002:736821 HCAPLUS

DN 137:256401

TI Method for forming contact having low resistivity using porous plug and method for forming semiconductor devices using the same

IN Park, Hee-sook

PA Samsung Electronics Co., Ltd., S. Korea

SO U.S. Pat. Appl. Publ., 22 pp.

CODEN: USXXCO

DT Patent

LA English

IC ICM H01L021-8242

ICS H01L021-44; H01L021-4763

NCL 438241000

CC 76-3 (Electric Phenomena)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002137276	A1	20020926	US 2002-103942	20020322
PRAI	KR 2001-15248	A	20010323		

AB A method for forming a contact of a semiconductor device, esp. a memory device, is disclosed in which the contact elec. properties are not degraded by thermal processes during contact fabrication. A 1st interlevel dielec. (ILD) layer is formed on a conductive region, e.g., an active region. The 1st ILD **layer** is **etched** to form a 1st contact hole therein to expose the conductive region. The 1st contact hole is filled with a porous **layer** having a high **etch** selectivity with respect to the 1st ILD layer to form a porous plug therein. Next, a 2nd ILD layer is formed overlying the porous plug. The 2nd ILD **layer** is **etched** to form a 2nd contact hole therein to expose the porous plug. The porous plug in the 1st contact hole is removed. The 1st and 2nd contact holes are filled with a conductive material to form a contact plug. During this contact formation process, the active region or the conductive region of the semiconductor substrate can be protected with the porous plug. Thus, the elec. characteristics degrdn. caused by dopant diffusion resulting from a thermal process during contact formation can be avoided.

ST porous plug barrier contact hole semiconductor memory device fabrication

IT Vapor deposition process

(chem., porous plug; method for forming contact having low resistivity using porous plug and method for forming semiconductor devices using same)

IT Porous materials

(films; method for forming contact having low resistivity using porous plug and method for forming semiconductor devices using same)

IT Contact holes

Electric contacts

Porous materials

Semiconductor devices

Semiconductor memory devices

Transistors

(method for forming contact having low resistivity using porous plug and method for forming semiconductor devices using same)

- IT Aerogels
 - Diffusion barrier
 - Heat treatment
 - Polishing
 - Xerogels
 - (porous plug; method for forming contact having low resistivity using porous plug and method for forming semiconductor devices using same)
- IT **Oxides (inorganic)**, processes
 - RL: NUU (Other use, unclassified); **REM (Removal or disposal)**;
 - PROC (Process); USES (Uses)
 - (porous plug; method for forming contact having low resistivity using porous plug and method for forming semiconductor devices using same)
- IT Glass, processes
 - RL: PEP (Physical, engineering or chemical process); PYP (Physical process); REM (Removal or disposal); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
 - (porous plug; method for forming contact having low resistivity using porous plug and method for forming semiconductor devices using same)
- IT Films
 - (porous; method for forming contact having low resistivity using porous plug and method for forming semiconductor devices using same)
- IT Etching
 - (removing porous plug; method for forming contact having low resistivity using porous plug and method for forming semiconductor devices using same)
- IT Glass, processes
 - RL: PEP (Physical, engineering or chemical process); PYP (Physical process); REM (Removal or disposal); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
 - (spin on, porous plug; method for forming contact having low resistivity using porous plug and method for forming semiconductor devices using same)
- IT 75-76-3, Tetramethylsilane 353-66-2, Dimethyldifluoro silane 420-56-4, Trimethylfluorosilane 1333-74-0, Hydrogen, processes 7782-44-7, Oxygen, processes 7783-61-1, Tetrafluorosilane
 - RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 - (CVD **precursor** for oxide porous plug; method for forming contact having low resistivity using porous plug and method for forming semiconductor devices using same)
- IT **7664-39-3**, Hydrogen fluoride, processes
 - RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 - (etchant for porous plug; method for forming contact having low resistivity using porous plug and method for forming semiconductor devices using same)
- IT **7631-86-9P**, Silica, processes 39345-87-4DP, Silicon carbide oxide, hydrogenated 39345-87-4P, Silicon carbide oxide 116305-88-5P, Silicon fluoride oxide
 - RL: PEP (Physical, engineering or chemical process); PYP (Physical process); REM (Removal or disposal); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
 - (porous plug; method for forming contact having low resistivity using porous plug and method for forming semiconductor devices using same)
- IT **7664-39-3**, Hydrogen fluoride, processes

RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (etchant for porous plug; method for forming contact having low resistivity using porous plug and method for forming semiconductor devices using same)

RN 7664-39-3 HCAPLUS

CN Hydrofluoric acid (8CI, 9CI) (CA INDEX NAME)

HF

IT 7631-86-9P, Silica, processes

RL: PEP (Physical, engineering or chemical process); PYP (Physical process); REM (Removal or disposal); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
 (porous plug; method for forming contact having low resistivity using porous plug and method for forming semiconductor devices using same)

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L60 ANSWER 5 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 2002:575443 HCAPLUS

DN 137:128349

TI Acidic etching for **removal of oxide films** and coatings from a **metal substrate**

IN Kool, Lawrence Bernard; Ruud, James Anthony

PA General Electric Company, USA

SO U.S. Pat. Appl. Publ., 11 pp.

CODEN: USXXCO

DT Patent

LA English

IC ICM C23G001-02

NCL 134003000

CC 56-6 (**Nonferrous Metals** and Alloys)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002100493	A1	20020801	US 2001-771186	20010129
PRAI	US 2001-771186		20010129		

AB Etching or **pickling** with aq. fluoro acid soln. is applied for selective **removal of oxide films** or coating from the surface of **metal**, alloy, or polymer **substrate**. The aq. bath contains the **fluoro acids** of **Si, Ge, Ti, Zr, Al, or Ga**, esp. **H₂SiF₆** or **H₂ZrF₆**. The acidic bath optionally includes an addnl. acid selected from **H₃PO₄, HNO₃, H₂SO₄, HCl, or HF**. The process is suitable for **removal of worn or damaged protective oxide coating** on **superalloy substrate**, esp. for repair coating on gas-turbine parts.

ST fluoro acid etching **oxide film removal substrate**; acidic bath **pickling oxide**

coating removal superalloy

IT Etching
(acidic; acidic etching bath for **removal of oxide films and coatings from metal substrates**)

IT Pickling
(acidic; acidic **pickling** bath for **removal of oxide films and coatings from metal substrates**)

IT Oxides (inorganic), processes
RL: REM (Removal or disposal); PROC (Process)
(films, removal of; acidic **pickling** bath for **removal of oxide films and coatings from metal substrates**)

IT Cast alloys
RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); PROC (Process)
(nickel alloys, **oxide removal on; acidic pickling** bath for **removal of oxide films and coatings from metal substrates**)

IT Turbines
(parts, **oxide removal on; acidic pickling** bath for **removal of oxide films and coatings from metal substrates**)

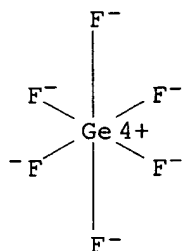
IT 64-19-7, Acetic acid, uses 6303-21-5, Phosphinic acid 7601-90-3, Perchloric acid, uses 7647-01-0, Hydrochloric acid, uses 7664-38-2, Phosphoric acid, uses 7664-93-9, Sulfuric acid, uses 7697-37-2, Nitric acid, uses 10034-85-2, Hydroiodic acid 10035-10-6, Hydrobromic acid, uses 13598-36-2, Phosphorous acid, uses
RL: MOA (Modifier or additive use); USES (Uses)
(etching bath contg.; acidic etching bath for **removal of oxide films and coatings from metal substrates**)

IT 12021-95-3 16950-43-9 16961-83-4, Hexafluorosilicic acid 17439-11-1, Fluorotitanic acid
RL: TEM (Technical or engineered material use); USES (Uses)
(etching bath contg.; acidic etching bath for **removal of oxide films and coatings from metal substrates**)

IT 16950-43-9 16961-83-4, Hexafluorosilicic acid 17439-11-1, Fluorotitanic acid
RL: TEM (Technical or engineered material use); USES (Uses)
(etching bath contg.; acidic etching bath for **removal of oxide films and coatings from metal substrates**)

RN 16950-43-9 HCAPLUS

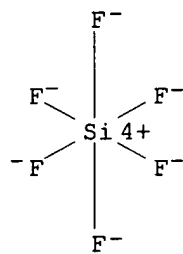
CN Germanate(2-), hexafluoro-, dihydrogen, (OC-6-11)- (9CI) (CA INDEX NAME)



2 H⁺

RN 16961-83-4 HCAPLUS

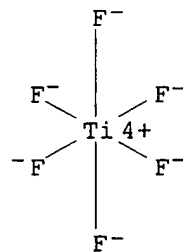
CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



2 H⁺

RN 17439-11-1 HCAPLUS

CN Titanate(2-), hexafluoro-, dihydrogen, (OC-6-11)- (9CI) (CA INDEX NAME)



2 H⁺

L60 ANSWER 6 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 2002:391342 HCAPLUS

DN 136:389424

KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

TI Two-bath conversion coating on metal or alloy surface for increased paint
adhesion
IN Sebrall, Lars; Wettere, Sean M.; Walte, Manfred
PA Chemetall G.m.b.H., Germany
SO Eur. Pat. Appl., 17 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM B05D007-14
CC 56-6 (**Nonferrous Metals** and Alloys)
Section cross-reference(s): 42

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1206977	A2	20020522	EP 2001-123885	20011005
	R: AT, BE, CH, DE, <u>DK</u> , ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	US 6488990	B1	20021203	US 2000-684271	20001006
PRAI	US 2000-684271	A	20001006		
AB	The surface of Al, Cu, Fe, Mg, Zn, or their alloys is <u>coated</u> at 10-100.degree. by 2-stage conversion with: (a) pickling-type bath contg. Zr, Hf, Ti, Si, and/or B ions with a fluoride; and (b) conversion bath contg. org. groups with optional acids or salts, to form self-assembling mols. (esp. with monolayer coverage). The conversion coating is a suitable primer for painting, adhesive application, rubber deposit, and/or sealing, and can be applied on small parts, strip, wire, or beverage cans. The pickling-type soln. typically contains Zr or Ti at 0.0001-0.1% with 0.001-0.2% fluoride. The conversion bath is prepd. with pH of 1-10, and optionally includes org. solvent. The primer coating is optionally applied in multilayer form by repeating the 2-stage conversion. The typical baths suitable for conversion coating of AA 6061 Al-alloy sheets contain: (a) deionized water with hexafluorozirconic acid for 0.016% Zr, hexafluorotitanic acid for Ti 0.043, and complexed hexafluoride at 0.12% with pH adjusted to 3; and (b) deionized water with dodecanediphosphonic acid at 0.33 g/L. The primer-coated Al-alloy sheets were suitable for painting with com. clear polyester.				
ST	conversion bath metal coating paint adhesion; aluminum alloy coating conversion bath paint adhesion; pickling stage conversion coating metal surface				
IT	Pickling (coating with; two-bath coating on metal surface with pickling and conversion for paint adhesion)				
IT	Coating process (conversion, primer; two-bath conversion coating on metal or alloy surface for increased paint adhesion)				
IT	Coating process (painting, primer for; two-bath coating on metal surface with pickling and conversion for paint adhesion)				
IT	674-70-4 674-71-5 763-26-8 1429-50-1, Ethylenediaminetetramethylene phosphonic acid 4546-06-9 4671-77-6, 1,4-Butanediphosphonic acid 4721-22-6 5943-21-5, 1,10-Decane diphosphonic acid 5943-66-8, 1,8-Octanediphosphonic acid 7440-21-3D, Silicon, compds. 7440-32-6D, Titanium, compds. 7440-42-8D, Boron, compds. 7440-58-6D, Hafnium, compds. 7440-67-7D, Zirconium, compds. 7450-59-1, 1,12-Dodecanediphosphonic acid 12021-95-3 13138-33-5 13817-79-3 15827-60-8, Diethylene triaminepentamethylene phosphonic acid 16984-48-8, Fluoride, uses 17439-11-1 , Hexafluorotitanic acid 23605-74-5 37971-36-1, 2-Phosphonobutane-1,2,4-tricarboxylic acid				

50421-68-6 74748-16-6 85590-01-8 159239-33-5 198065-35-9
 210237-15-3 216106-45-5 378232-64-5 412916-50-8 412916-52-0
 412916-54-2

RL: MOA (Modifier or additive use); USES (Uses)

(coating bath contg.; two-bath coating on metal surface with pickling and conversion for paint adhesion)

IT 7429-90-5, Aluminum, processes 7439-89-6, Iron, processes 7439-95-4, Magnesium, processes 7440-50-8, Copper, processes 7440-66-6, Zinc, processes 12616-75-0, AA 6061

RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); PROC (Process)

(coating of; two-bath coating on metal surface with pickling and conversion for paint adhesion)

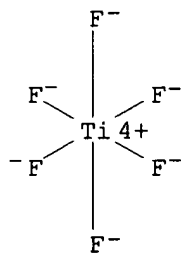
IT 17439-11-1, Hexafluorotitanic acid

RL: MOA (Modifier or additive use); USES (Uses)

(coating bath contg.; two-bath coating on metal surface with pickling and conversion for paint adhesion)

RN 17439-11-1 HCAPLUS

CN Titanate(2-), hexafluoro-, dihydrogen, (OC-6-11)- (9CI) (CA INDEX NAME)



2 H⁺

L60 ANSWER 7 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 2002:293775 HCAPLUS

DN 136:326996

TI Method for pretreating and subsequently coating metallic surfaces with a paint-type coating prior to forming and use of substrates coated in this way

IN Shimakura, Toshiaki; Bittner, Klaus; Domes, Heribert; Wietzoreck, Hardy; Jung, Christian

PA Chemteall GmbH, Germany

SO PCT Int. Appl., 115 pp.

CODEN: PIXXD2

DT Patent

LA German

IC ICM C09D005-00

CC 42-2 (Coatings, Inks, and Related Products)

Section cross-reference(s): 55, 56

FAN.CNT 6

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002031065	A2	20020418	WO 2001-EP11738	20011010
	WO 2002031065	A3	20020627		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
 CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
 GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
 LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL,
 PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG,
 US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
 BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2002015940 A5 20020422 AU 2002-15940 20011010

PRAI DE 2000-10050532 A 20001011

DE 2001-10110830 A 20010306

DE 2001-10119606 A 20010421

WO 2001-EP11738 W 20011010

AB The invention relates to a method for **coating** a metallic **strip**. The strip or optionally, the strip sections produced from said strip in the subsequent process, is/are coated first with at least one anticorrosion layer and then with at least one layer of a paint-like coating contg. polymers and/or with at least one paint coating. After being coated with at least one anticorrosion layer or after being coated with at least one layer of a paint-like coating and/or with at least one paint **coating**, the **strip** is divided into strip sections. The coated strip sections are then formed, joined and/or coated with at least one (other) paint-like coating and/or paint coating. At least one of the anticorrosion layers is formed by coating the surface with an aq. dispersion contg. the following in addn. to water: (a) at least one org. film former contg. at least one water-sol. or water-dispersed polymer; (b) a quantity of cations and/or hexa- or tetrafluoro complexes of cations chosen from a group consisting of titanium, zirconium, hafnium, silicon, aluminum and boron; and (c) at least one inorg. compd. in particle form with an av. particle diam. measured on a scanning electron microscope of 0.005 to 0.2 .mu.m. The clean metallic surface is brought into contact with the aq. compn. and a film contg. particles is formed on the metallic surface, this film then being dried and optionally also hardened, the dried and optionally, also hardened film having a layer thickness of 0.01 to 10 .mu.m. The speed of coating metal objects with complex profiles is high using this process and need of Cr6+ compds. and acids is reduced. The coated products are useful in manuf. of automobile bodies, aircraft, and spacecraft.

ST titanium fluoride water thinned anticorrosive primer metal strip; spacecraft metal substrate water thinned anticorrosive primer; aircraft metal substrate water thinned anticorrosive primer; automobile body metal substrate water thinned anticorrosive primer; chromium free inorg compd water thinned anticorrosive primer metal; boron fluoride water thinned anticorrosive primer metal strip; aluminum fluoride water thinned anticorrosive primer metal strip; silicon fluoride water thinned anticorrosive primer metal strip; hafnium fluoride water thinned anticorrosive primer metal strip; zirconium fluoride water thinned anticorrosive primer metal strip

IT Layered double hydroxides

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(aluminum-contg., anticorrosive primer component; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)

IT Silanes

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

- (amino, anticorrosive primer component; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)
- IT Alcohols, uses
 - Amines, uses
 - Carbonates, uses
 - Fluorides, uses
 - Oxides (inorganic), uses
 - Paraffin waxes, uses
 - Phosphates, uses
 - Rare earth oxides
 - Silicates, uses
 - Sulfates, uses
 - Transition metal compounds
- RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 - (anticorrosive primer component; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)
- IT Aminoplasts
 - RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 - (anticorrosive primer component; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)
- IT Polyamines
 - RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 - (anticorrosive primer component; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)
- IT Polyesters, uses
 - RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 - (anticorrosive primer component; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)
- IT Polysiloxanes, uses
 - RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 - (anticorrosive primer component; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)
- IT Polyurethanes, uses
 - RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 - (anticorrosive primer component; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)
- IT Primers (paints)
 - (anticorrosive; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)
- IT Automobiles
 - (bodies; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)
- IT Coating process
 - (coil; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)

- IT Polysiloxanes, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (polyester-, anticorrosive primer component; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)
- IT Polyesters, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (polysiloxane-, anticorrosive primer component; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)
- IT Conducting polymers
 (powder, anticorrosive primer component; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)
- IT Aircraft
 Space vehicles
 (pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)
- IT Amines, uses
 Epoxides
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (silyl, anticorrosive primer component; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)
- IT Galvanized steel
 RL: MSC (Miscellaneous)
 (substrate; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)
- IT Adhesives
 Inks
 (top layers; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)
- IT Primers (paints)
 (water-thinned; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)
- IT Aluminum alloy, base
 Copper alloy, base
 Iron alloy, base
 Magnesium alloy, base
 Nickel alloy, base
 Tin alloy, base
 Titanium alloy, base
 Zinc alloy, base
 RL: MSC (Miscellaneous)
 (substrate; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)
- IT 674-70-4 674-71-5 763-26-8 1429-50-1, Ethylenediaminetetramethylenephosphonic acid 3071-50-9 4546-06-9, p-Xylylenediphosphonic acid 4671-77-6, 1,4-Butanediphosphonic acid 4721-22-6, 1,6-Hexanediphosphonic acid 5943-21-5, 1,10-Decanediphosphonic acid 5943-66-8, 1,8-Octanediphosphonic acid 6419-19-8, Aminotrimethylenephosphonic acid 7450-59-1, 1,12-Dodecanediphosphonic acid 15827-60-8, Diethylenetriaminepentamethylenephosphonic acid 23605-74-5 26914-14-7, Diethylthiourea 37971-36-1 50421-68-6 74748-16-6 85590-01-8 151861-26-6, 1,14-Tetradecanediphosphonic acid 159239-33-5,

12-Mercaptododecylphosphonic acid 198065-35-9, 12-(Ethylamino)dodecanephosphonic acid 210237-15-3 216106-45-5
378232-64-5 412916-50-8 412916-52-0 412916-54-2

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(addnl. corrosion inhibitor; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)

IT 50-21-5D, Lactic acid, titanium complexes 77-92-9, Citric acid, uses 598-62-9, Manganese carbonate 1306-38-3, Cerium dioxide, uses 1314-13-2, Zinc oxide, uses 1314-23-4, Zirconia, uses 1314-36-9, Yttrium oxide, uses 1343-98-2, Silicic acid 1344-28-1, Aluminum oxide, uses 2530-83-8, 3-Glycidyloxypropyltrimethoxysilane 4619-20-9D, zirconium complexes 7429-90-5D, Aluminum, fluoro complexes 7439-89-6D, Iron, compds. 7439-91-0D, Lanthanum, salts 7439-96-5D, Manganese, salts 7439-98-7D, Molybdenum, compds. 7440-02-0D, Nickel, compds. 7440-21-3D, Silicon, fluoro complexes 7440-32-6D, Titanium, fluoro complexes 7440-33-7D, Tungsten, compds. 7440-42-8D, Boron, fluoro complexes 7440-47-3D, Chromium, compds. 7440-48-4D, Cobalt, compds. 7440-58-6D, Hafnium, fluoro complexes 7440-67-7D, Zirconium, fluoro complexes 7440-70-2D, Calcium, salts 7585-20-8, Zirconium acetate 7631-86-9, Silica, uses 7727-43-7, Barium sulfate 12021-95-3 13463-67-7, Titania, uses 13822-56-5, 3-Aminopropyltrimethoxysilane 15879-01-3, Triethanolamine titanate **17439-11-1** 21645-51-2, Aluminum hydroxide, uses 22829-17-0, Ammonium zirconium carbonate 38497-57-3, Titanium acetate 73215-17-5 133962-46-6

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(anticorrosive primer component; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)

IT 79-10-7D, Acrylic acid, esters, polymers 9002-89-5, Polyvinyl alcohol 9002-98-6, Polyethylenimine 9003-39-8, Polyvinylpyrrolidone 9003-53-6, Polystyrene 9011-05-6, Urea resin 25608-40-6, Polyaspartic acid 26063-13-8, Polyaspartic acid 59269-51-1, Polyvinylphenol

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(anticorrosive primer component; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)

IT 9003-01-4, Polyacrylic acid 9010-77-9, Acrylic acid-ethylene copolymer 11101-13-6 12781-95-2 27936-88-5, Acrylic acid-vinylphosphonic acid copolymer

RL: TEM (Technical or engineered material use); USES (Uses)

(anticorrosive primer component; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)

IT 12597-69-2, Steel, miscellaneous

RL: MSC (Miscellaneous)

(substrate; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)

IT 9002-86-2, PVC

RL: TEM (Technical or engineered material use); USES (Uses)

(top layers; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)

IT 9002-88-4, Polyethylene 9003-07-0, Polypropylene

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(wax, anticorrosive primer component; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)

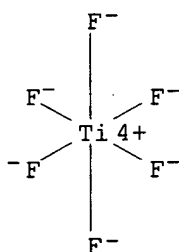
IT 17439-11-1

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(anticorrosive primer component; pretreating with anticorrosive primers and subsequently coating metallic surfaces with a paint-type coating prior to forming)

RN 17439-11-1 HCAPLUS

CN Titanate(2-), hexafluoro-, dihydrogen, (OC-6-11)- (9CI) (CA INDEX NAME)



●2 H⁺

L60 ANSWER 8 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 2002:290758 HCAPLUS

DN 136:302787

TI Additional etching to decrease polishing time for shallow-trench isolation in semiconductor processing

IN Kuehne, Stephen C.; Maury, Alvaro; Shive, Scott F.

PA Agere Systems Guardian Corp., USA

SO U.S., 15 pp.

CODEN: USXXAM

DT Patent

LA English

IC ICM H01L021-76

NCL 438427000

CC 76-3 (Electric Phenomena)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6372605	B1	20020416	US 2000-603340	20000626
PRAI	US 2000-603340		20000626		

AB During formation of shallow-trench isolation (STI) structures during semiconductor processing, an addnl. oxide-redn. etching step was performed prior to chem.-mech. processing to lower the polishing time. In one implementation wet-etching and/or sputter etch-back (SEB) was performed prior to applying a reverse-tone mask. In another implementation a wet etching step was performed after the reverse-tone mask is stripped. One significant result of each of these steps is a redn. in the height and width of at least some of the oxide horns that remain after the reverse-tone mask is stripped. As such, the oxide structures that need to be planarized during CMP will be smaller than those of the prior art.

Also, since the resulting oxide structures that need to be planarized by CMP processing are smaller, the oxide layer can be initially applied at a smaller thickness than that of the prior art. As such, the duration of CMP processing can be correspondingly shorter, resulting in polished semiconductor wafer surfaces with greater uniformity than that provided by the prior art.

- ST etching oxide chem mech polishing semiconductor device fabrication
- IT Dielectric films
 - Etching
 - Redox reaction
 - Semiconductor device fabrication
 - (addnl. etching to decrease polishing time for shallow-trench isolation in semiconductor processing)
- IT **Oxides (inorganic)**, processes
 - RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); **REM (Removal or disposal)**;
 - PROC (Process); USES (Uses)
 - (addnl. etching to decrease polishing time for shallow-trench isolation in semiconductor processing)
- IT Noble gases, uses
 - RL: NUU (Other use, unclassified); USES (Uses)
 - (addnl. etching to decrease polishing time for shallow-trench isolation in semiconductor processing)
- IT Polishing
 - (chem.-mech.; addnl. etching to decrease polishing time for shallow-trench isolation in semiconductor processing)
- IT Etching
 - (dry; addnl. etching to decrease polishing time for shallow-trench isolation in semiconductor processing)
- IT Sputtering
 - (etching; addnl. etching to decrease polishing time for shallow-trench isolation in semiconductor processing)
- IT Hydrocarbons, processes
 - RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 - (fluoro; addnl. etching to decrease polishing time for shallow-trench isolation in semiconductor processing)
- IT Etching
 - (sputter; addnl. etching to decrease polishing time for shallow-trench isolation in semiconductor processing)
- IT **7631-86-9**, Silicon dioxide, processes
 - RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); REM (Removal or disposal); PROC (Process); USES (Uses)
 - (addnl. etching to decrease polishing time for shallow-trench isolation in semiconductor processing)
- IT **630-08-0**, Carbon monoxide, processes **7664-39-3**, Hydrogen fluoride, processes
 - RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 - (addnl. etching to decrease polishing time for shallow-trench isolation in semiconductor processing)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

- (1) Anon; DE 010011642 A1 2000 HCAPLUS
- (2) Anon; JP 164690 A 2000
- (3) Chen; US 6169012 B1 2001 HCAPLUS
- (4) Jang; US 6004863 A 1999 HCAPLUS

- (5) Jang; US 6043133 A 2000 HCAPLUS
- (6) Karlsson; US 6124183 A 2000 HCAPLUS
- (7) Kim; US 6071792 A 2000 HCAPLUS
- (8) Lin; US 6048771 A 2000 HCAPLUS
- (9) Sahota; US 5923993 A 1999 HCAPLUS
- (10) Shoda; US 6150072 A 2000 HCAPLUS
- (11) Sugishima; US 4352724 A 1982 HCAPLUS
- (12) Weigand; US 5851899 A 1998 HCAPLUS
- (13) Yang; US 6057210 A 2000 HCAPLUS
- (14) Yang; US 6159822 A 2000 HCAPLUS
- (15) Yang; US 6171929 B1 2001 HCAPLUS
- (16) Yao; US 6048775 A 2000 HCAPLUS

IT 7631-86-9, Silicon dioxide, processes
 RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); REM (Removal or disposal); PROC (Process); USES (Uses)
 (addnl. etching to decrease polishing time for shallow-trench isolation in semiconductor processing)

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

IT 7664-39-3, Hydrogen fluoride, processes
 RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (addnl. etching to decrease polishing time for shallow-trench isolation in semiconductor processing)

RN 7664-39-3 HCAPLUS

CN Hydrofluoric acid (8CI, 9CI) (CA INDEX NAME)

HF

L60 ANSWER 9 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 2002:245610 HCAPLUS

DN 136:393880

TI Stiction-free combination of aqueous and vapor phase sacrificial oxide removal for MEMS devices

AU Anon.

CS UK

SO Research Disclosure (2002), 455(March), 420 (No. 455061)
 CODEN: RSDSBB; ISSN: 0374-4353

PB Kenneth Mason Publications Ltd.

DT Journal; Patent

LA English

CC 76-3 (Electric Phenomena)

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RD 455061		20020310		
RD 2002-455061		20020310		

PI RD 455061 20020310

PRAI RD 2002-455061 20020310

AB Basic methods for removing SiO₂ from MEMS devices is described. The striction caused by surface tension of the liq. can be avoided by using a combination of the aq. HF process and the vapor phase HF release process.

ST MEMS device vapor phase oxide removal striction redn
 IT Micromachines
 (microelectromech. devices; striction-free combination of aq. and vapor
 phase sacrificial oxide removal for MEMS devices)
 IT Cleaning
 Etching
 Semiconductor device fabrication
 Surface tension
 (striction-free combination of aq. and vapor phase sacrificial oxide
 removal for MEMS devices)
 IT **Oxides (inorganic), processes**
 RL: **REM (Removal or disposal); PROC (Process)**
 (striction-free combination of aq. and vapor phase sacrificial oxide
 removal for MEMS devices)
 IT **7664-39-3, Hydrogen fluoride, reactions**
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (striction-free combination of aq. and vapor phase sacrificial oxide
 removal for MEMS devices)
 IT **7631-86-9, Silica, processes**
 RL: REM (Removal or disposal); PROC (Process)
 (striction-free combination of aq. and vapor phase sacrificial oxide
 removal for MEMS devices)
 IT **7664-39-3, Hydrogen fluoride, reactions**
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (striction-free combination of aq. and vapor phase sacrificial oxide
 removal for MEMS devices)
 RN 7664-39-3 HCAPLUS
 CN Hydrofluoric acid (8CI, 9CI) (CA INDEX NAME)

HF

IT **7631-86-9, Silica, processes**
 RL: REM (Removal or disposal); PROC (Process)
 (striction-free combination of aq. and vapor phase sacrificial oxide
 removal for MEMS devices)
 RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L60 ANSWER 10 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 2002:236858 HCAPLUS
 DN 136:266656
 TI High throughput screening method
 IN Lagraff, John Robert; Ruud, James Anthony; Sun, Xiao-Dong; Carnahan, James
 Claude
 PA General Electric Company, USA
 SO Eur. Pat. Appl., 20 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 IC ICM B01J019-00
 ICS C23G001-00

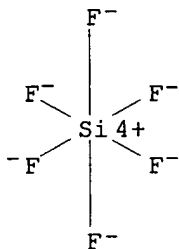
CC 56-6 (Nonferrous Metals and Alloys)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1190763	A1	20020327	EP 2001-307856	20010914
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	US 6420178	B1	20020716	US 2000-666381	20000920
	BR 2001004143	A	20020430	BR 2001-4143	20010919
	US 2002115221	A1	20020822	US 2002-126349	20020422
PRAI	US 2000-666381	A	20000920		
AB	A liq. chem. stripping or cleaning soln. is selected by combinatorial high throughput screening. A high throughput screening well array assembly includes (A) a metal substrate and (B) a mask that defines an array of wells on the substrate. A combinatorial high throughput screening system includes (A) a metal substrate and (B) a mask that defines an array of wells on the substrate and a reaction vessel to receive the well array assembly.				
ST	turbine coating removal stripping agent screening system				
IT	Polyoxyalkylenes, uses RL: TEM (Technical or engineered material use); USES (Uses) (Plurafac; high throughput screening and optimizing of soln. mixts. for chem. stripping or cleaning of gas turbine component coating)				
IT	Apparatus (combinatorial; high throughput screening and optimizing of soln. mixts. for chem. stripping or cleaning of gas turbine component coating)				
IT	Cleaning Coating materials Turbines (high throughput screening and optimizing of soln. mixts. for chem. stripping or cleaning of gas turbine component coating)				
IT	Fluoropolymers, uses Metals, uses RL: DEV (Device component use); USES (Uses) (high throughput screening and optimizing of soln. mixts. for chem. stripping or cleaning of gas turbine component coating)				
IT	Reaction (micro scale, of an array of candidate stripping or cleaning soln.; high throughput screening and optimizing of soln. mixts. for chem. stripping or cleaning of gas turbine component coating)				
IT	Coating removers (selection of; high throughput screening and optimizing of soln. mixts. for chem. stripping or cleaning of gas turbine component coating)				
IT	128985-79-5 RL: DEV (Device component use); USES (Uses) (PtAl-coated; high throughput screening and optimizing of soln. mixts. for chem. stripping or cleaning of gas turbine component coating)				
IT	7664-38-2, Phosphoric acid, uses 9002-84-0 16961-83-4 , Hydrofluorosilicic acid 94766-95-7 RL: DEV (Device component use); USES (Uses) (high throughput screening and optimizing of soln. mixts. for chem. stripping or cleaning of gas turbine component coating)				
IT	39283-42-6, Rodine RL: TEM (Technical or engineered material use); USES (Uses) (high throughput screening and optimizing of soln. mixts. for chem. stripping or cleaning of gas turbine component coating)				

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

- (1) Anon; PATENT ABSTRACTS OF JAPAN 1984, V008(187), PC-240
 - (2) Boliden Ab; EP 0029418 A 1981 HCAPLUS
 - (3) Caruana, C; CHEMICAL ENGINEERING PROGRESS 1998, V94(10), P11
 - (4) Goldwasser, I; US 5985356 A 1999 HCAPLUS
 - (5) Kawasaki Seitetsu Kk; JP 59083783 A 1984 HCAPLUS
 - (6) Nexstar Pharmaceuticals Inc; WO 9720076 A 1997 HCAPLUS
 - (7) Nippon Steel Corp; EP 0513753 A 1992 HCAPLUS
- IT 16961-83-4, Hydrofluorosilicic acid
 RL: DEV (Device component use); USES (Uses)
 (high throughput screening and optimizing of soln. mixts. for chem.
 stripping or cleaning of gas turbine component coating)
- RN 16961-83-4 HCAPLUS
 CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



●2 H⁺

L60 ANSWER 11 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 2002:107253 HCAPLUS
 DN 136:169902
 TI Recovery of alumina, titania and ferric oxide from bauxite and/or red mud
 IN Jha, Animesh; Antony, Malpan Pailo; Thathavadkar, Vilas D.
 PA University of Leeds, UK
 SO PCT Int. Appl., 26 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM C01F007-08
 ICS C01G023-047; C01G049-06
 CC 49-3 (Industrial Inorganic Chemicals)
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002010068	A1	20020207	WO 2001-GB3370	20010730
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,				

BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI GB 2000-18592 A 20000729

AB Alumina, titania, and ferric oxide can be recovered from bauxite and/or red mud by roasting the mineral ore in the presence of an alkali at 1150 K, extg. the desired **metal** salt produced in step using water as a solvent, pptn. of a hydroxide salt, and converting the hydroxide salt into an appropriate oxide by calcining. The alkali is a group IA or IIA **metal** carbonate, preferably Na₂CO₃ or K₂CO₃. An inorg. acid is used for the pptn. step, such as HF, HCl, HNO₃, H₂SO₄, or preferably CO₂. Following the recovery of alumina, titania and ferric oxide are recovered sequentially from a H₂SO₄-based slurry of the dried filtrate.

ST alumina titania ferric oxide purifn mineral ore; bauxite red mud **metal** oxide recovery roasting carbonate

IT Firing (heat treating)
(ore; recovery of alumina, titania and ferric oxide from bauxite and/or red mud)

IT Red mud (bauxite processing residue)
(processing of; recovery of alumina, titania and ferric oxide from bauxite and/or red mud)

IT Bauxite
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(processing of; recovery of alumina, titania and ferric oxide from bauxite and/or red mud)

IT Oxides (inorganic), preparation
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PUR (Purification or recovery); RCT (Reactant); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(purifn. of; recovery of alumina, titania and ferric oxide from bauxite and/or red mud)

IT Leaching
(recovery of alumina, titania and ferric oxide from bauxite and/or red mud)

IT 124-38-9, Carbon dioxide, reactions 7647-01-0, Hydrochloric acid, reactions 7664-39-3, Hydrofluoric acid, reactions 7664-93-9, Sulfuric acid, reactions 7697-37-2, Nitric acid, reactions
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); **RCT (Reactant)**; PROC (Process); RACT (Reactant or reagent)
(pptg. agent; recovery of alumina, titania and ferric oxide from bauxite and/or red mud)

IT 1309-37-1P, Ferric oxide, preparation 1344-28-1P, Alumina, preparation **13463-67-7P**, Titania, preparation
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PUR (Purification or recovery); **RCT (Reactant)**; PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(purifn. of; recovery of alumina, titania and ferric oxide from bauxite and/or red mud)

IT 463-79-6D, Carbonic acid, alkali **metal** or alk. earth salts
497-19-8, Sodium carbonate, reactions
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(recovery of alumina, titania and ferric oxide from bauxite and/or red mud)

IT 1305-78-8, Calcium oxide, reactions
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); **REM (Removal or disposal)**; PROC (Process); RACT (Reactant or reagent)

(recovery of alumina, titania and ferric oxide from bauxite and/or red mud)

IT 584-08-7, Potassium carbonate
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
 (removal of; recovery of alumina, titania and ferric oxide from bauxite and/or red mud)

IT 1309-48-4, Magnesium oxide, reactions 7631-86-9, Silica, reactions
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent)
 (removal of; recovery of alumina, titania and ferric oxide from bauxite and/or red mud)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Blancs de Zinc de La Mediterra; GB 848230 A 1960
- (2) McDowell, W; US 4254088 A 1981 HCAPLUS
- (3) Monolith Portland Midwest Comp; GB 601968 A 1948 HCAPLUS
- (4) Sugahara, Y; US 4265864 A 1981 HCAPLUS
- (5) Zimmer, E; US 4119698 A 1978 HCAPLUS

IT 7664-39-3, Hydrofluoric acid, reactions
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
 (pptg. agent; recovery of alumina, titania and ferric oxide from bauxite and/or red mud)

RN 7664-39-3 HCAPLUS

CN Hydrofluoric acid (8CI, 9CI) (CA INDEX NAME)

HF

IT 13463-67-7P, Titania, preparation
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PUR (Purification or recovery); RCT (Reactant); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
 (purifn. of; recovery of alumina, titania and ferric oxide from bauxite and/or red mud)

RN 13463-67-7 HCAPLUS

CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

IT 7631-86-9, Silica, reactions
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent)
 (removal of; recovery of alumina, titania and ferric oxide from bauxite and/or red mud)

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L60 ANSWER 12 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 2001:900210 HCAPLUS
 DN 136:9622
 TI Acidic etching for selective **removal** of aluminide diffusion
coating from superalloy substrate
 IN Kool, Lawrence Bernard; Ruud, James Anthony; Lagraff, John Robert
 PA General Electric Company, USA
 SO Eur. Pat. Appl., 12 pp.
 CODEN: EPXXDW

DT Patent
 LA English
 IC ICM C23F001-44
 ICS F01D005-00; F01D025-00
 CC 56-6 (**Nonferrous Metals** and Alloys)
 FAN.CNT 1

*applicant**★
Date NG*

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1162286	A1	20011212	EP 2001-304773	20010531
	R: AT, BE, CH, DE, <u>DK</u> , ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2002053985	A2	20020219	JP 2001-173362	20010608
PRAI	US 2000-591531	A	20000609		
AB	A diffusion or overlay coating on a superalloy substrate is selectively removed by acidic etching with aq. bath contg. a fluoro acid of Si, Ge, Ti, Zr, Al, and/or Ga , esp. H2SiF6 . The acidic bath optionally contains addnl. H3PO4, HNO3, H2SO4, or other inorg. acids. The process is suitable for selective removal of worn aluminide or Ni-Cr-Al-Y type coating on superalloy gas-turbine parts, or optionally on acid-resistant polymer substrates. The Ni-Co-Cr-Al-Y alloy coating .apprx.250 .mu.m thick on cast Ni-superalloy parts was removed in 3 h at 80.degree. by acidic etching in the stirred aq. bath contg. H2SiF5 and H3PO4, with no corrosion of the superalloy substrate.				
ST	superalloy acidic etching removal worn aluminide coating ; fluoro acid etching worn alloy coating removal				
IT	Polymers, processes RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process) (alloy coating on, etching for removal of; acidic etching for removal of aluminide diffusion coating from superalloy substrate)				
IT	Etching (alloy coating removal by; acidic etching for removal of aluminide diffusion coating from superalloy substrate)				
IT	Turbines (blades, alloy coating on, etching for removal of; acidic etching for removal of aluminide diffusion coating from superalloy substrate)				
IT	Coating process (diffusion, aluminide alloys; acidic etching for removal of aluminide diffusion coating from superalloy substrate)				
IT	Sulfonic acids, uses				

RL: MOA (Modifier or additive use); USES (Uses)
 (etching bath contg.; acidic etching for **removal** of aluminide
 diffusion **coating** from superalloy substrate)

IT **Coating removers**
 (for aluminide alloys; acidic etching for **removal** of
 aluminide diffusion **coating** from superalloy substrate)

IT Cast alloys
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical
 process); PROC (Process)

(superalloys, coating on; acidic etching for **removal** of
 aluminide diffusion **coating** from superalloy substrate)

IT 64-19-7, Acetic acid, uses 6303-21-5, Phosphinic acid 7601-90-3,
 Perchloric acid, uses 7647-01-0, Hydrochloric acid, uses 7664-38-2,
 Phosphoric acid, uses 7664-39-3, Hydrofluoric acid, uses 7664-93-9,
 Sulfuric acid, uses 7697-37-2, Nitric acid, uses 10034-85-2,
 Hydroiodic acid 10035-10-6, Hydrobromic acid, uses 13598-36-2,
 Phosphorous acid, uses 52861-00-4 61048-41-7 61048-42-8 76623-47-7
 RL: MOA (Modifier or additive use); USES (Uses)

(etching bath contg.; acidic etching for **removal** of aluminide
 diffusion **coating** from superalloy substrate)

IT 12021-95-3 **16950-43-9 16961-83-4**, Fluorosilicic acid
17439-11-1, Fluorotitanic acid
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical
 process); PROC (Process)

(etching bath with; acidic etching for **removal** of aluminide
 diffusion **coating** from superalloy substrate)

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE

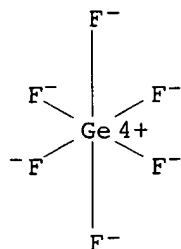
- (1) Anon; GALVANOTECHNIK 1988, V79(9), P2987
- (2) Baldi, A; US 3622391 A 1971 HCAPLUS
- (3) Brindisi, F; US 4004956 A 1977 HCAPLUS
- (4) Furukawa Electric Co Ltd; DE 2421313 A 1974 HCAPLUS
- (5) Gen Electric; EP 1050604 A 2000 HCAPLUS
- (6) Henkel Corp; WO 9113186 A 1991 HCAPLUS
- (7) Henkel Corp; WO 9303198 A 1993 HCAPLUS
- (8) Missel, L; US 3514407 A 1970 HCAPLUS
- (9) Nippon Paint Co Ltd; EP 0106459 A 1984 HCAPLUS
- (10) Wetinghouse Electric; FR 950328 A 1949

IT **16950-43-9 16961-83-4**, Fluorosilicic acid
17439-11-1, Fluorotitanic acid
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical
 process); PROC (Process)

(etching bath with; acidic etching for **removal** of aluminide
 diffusion **coating** from superalloy substrate)

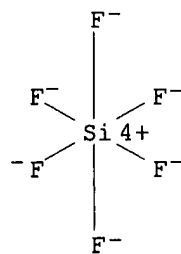
RN 16950-43-9 HCAPLUS

CN Germanate(2-), hexafluoro-, dihydrogen, (OC-6-11)- (9CI) (CA INDEX NAME)



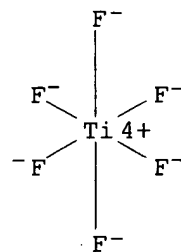
2 H⁺

RN 16961-83-4 HCAPLUS
CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



● 2 H⁺

RN 17439-11-1 HCAPLUS
CN Titanate(2-), hexafluoro-, dihydrogen, (OC-6-11)- (9CI) (CA INDEX NAME)



2 H⁺

L60 ANSWER 13 OF 65 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:763349 HCAPLUS
DN 135:309344

TI System for the preferential **removal** of silicon **oxide**
 IN Mueller, Brian L.; Chamberlain, Jeffrey P.; Schroeder, David J.
 PA Cabot Microelectronics Corporation, USA
 SO PCT Int. Appl., 20 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM H01L021-00
 CC 66-4 (Surface Chemistry and Colloids)
 Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001078116	A2	2001/10/18	WO 2001-US11604	20010409
	WO 2001078116	A3	20020221		
	W:		AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM		
	RW:		GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG		
	EP 1272580	A2	20030108	EP 2001-926798	20010409
	R:		AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR		
PRAI	US 2000-547425	A	20000411		
	WO 2001-US11604	W	20010409		
AB	A system, a compn., and a method for planarizing or polishing a composite substrate are provided. The planarizing or polishing system comprises (i) a polishing compn. comprising (a) .apprx.0.5 wt% or more of F- ions, (b) .apprx.1 wt% or more of an amine, (c) .apprx.0.1 wt% or more of a base, and (d) H2O, and (ii) an abrasive. The present invention also provides a method of planarizing or polishing a composite substrate comprising contacting the substrate with a system comprising (i) a polishing compn. comprising (a) .apprx.0.5 wt% or more of F- ions, (b) .apprx.1 wt% or more of an amine, (c) .apprx.0.1 wt% or more of a base, and (d) H2O, and (ii) an abrasive.				
ST	polishing planarizing composite semiconductor substrate preferential removal silicon oxide				
IT	Abrasives (additives of compns.; system, compn. and method of planarizing and polishing for preferential removal of silicon oxide)				
IT	Amines, processes RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (additives of compns.; system, compn. and method of planarizing and polishing for preferential removal of silicon oxide)				
IT	Alcohols, processes RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (amino, compn. for polishing; system, compn. and method of planarizing and polishing for preferential removal of silicon oxide)				
IT	Mixing				

- (blending abrasive in polishing pad; system, compn. and method of planarizing and polishing for preferential **removal** of silicon **oxide**)
- IT Surfactants
(compn. for polishing; system, compn. and method of planarizing and polishing for preferential **removal** of silicon **oxide**)
)
- IT Chlorates
Chromates
Permanganates
Peroxides, processes
Peroxysulfates
Tannins
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(compn. for polishing; system, compn. and method of planarizing and polishing for preferential **removal** of silicon **oxide**)
)
- IT Hydrocarbons, processes
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(fluoro, polishing pad; system, compn. and method of planarizing and polishing for preferential **removal** of silicon **oxide**)
)
- IT Group IIIA element compounds
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(gallates, compn. for polishing; system, compn. and method of planarizing and polishing for preferential **removal** of silicon **oxide**)
)
- IT Polyamides, processes
Polycarbonates, processes
Polyesters, processes
Polyethers, processes
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(polishing pad; system, compn. and method of planarizing and polishing for preferential **removal** of silicon **oxide**)
)
- IT Polyurethanes, processes
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(rheol. control agents; system, compn. and method of planarizing and polishing for preferential **removal** of silicon **oxide**)
)
- IT Composites
Electric insulators
(**substrate**; system, compn. and method of planarizing and polishing for preferential **removal** of silicon **oxide**)
)
- IT Polishing
(system, compn. and method of planarizing and polishing for preferential **removal** of silicon **oxide**)
)
- IT 1306-38-3, Ceria, processes 1309-48-4, Magnesia, processes 1310-53-8, Germania, processes 1314-23-4, Zirconia, processes 1344-28-1, Alumina, processes 13463-67-7, Titania, processes
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(abrasives; system, compn. and method of planarizing and polishing for

- preferential **removal** of silicon oxide)
- IT 16984-48-8, Fluoride, processes
 RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (additives of compns.; system, compn. and method of planarizing and polishing for preferential **removal** of silicon oxide
)
- IT 51-17-2, Benzimidazole 75-59-2, Tetramethylammonium hydroxide 77-92-9, Citric acid, processes 78-96-6, Isopropanolamine 87-66-1, Pyrogallol 87-69-4, Tartaric acid, processes 88-99-3, Phthalic acid, processes 95-14-7, 1H-Benzotriazole 100-37-8, Diethylaminoethanol 108-01-0, Dimethylaminoethanol 109-83-1, Methylaminoethanol 126-44-3, Citrate, processes 141-43-5, Ethanolamine, processes 149-61-1, Malate 149-91-7, Gallic acid, processes 156-80-9, Malonate, processes 497-19-8, Sodium carbonate, processes 526-95-4, Gluconic acid 563-69-9, Carbonoperoxoic acid 608-59-3, Gluconate 1310-58-3, Potassium hydroxide, processes 1310-73-2, Sodium hydroxide, processes 1332-29-2, Tin oxide 1336-21-6, Ammonium hydroxide 1341-49-7, Ammonium hydrogen bifluoride 3179-63-3 3198-29-6, processes 6915-15-7, Malic acid 7005-47-2, 2-Dimethylamino-2-methyl-1-propanol 7601-90-3, Perchloric acid, processes 7664-38-2, Phosphoric acid, processes 7664-39-3, Hydrogen fluoride, processes 7782-68-5, Iodic acid 7789-23-3, Potassium fluoride 7789-29-9, Potassium fluoride (K(HF₂)) 12021-95-3 12125-01-8, Ammonium fluoride 12674-33-8, Perboric acid 13444-71-8, Periodic acid 13746-66-2, Potassium ferricyanide 15477-76-6, Phosphonate 15541-45-4, Bromate 16068-46-5, Potassium phosphate 16872-11-0 **16961-83-4**, Fluosilicic acid **17439-11-1**, Fluorotitanic acid 19445-25-1, Perbromic acid 21351-79-1, Cesium hydroxide 37306-44-8, Triazole
 RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (compn. for polishing; system, compn. and method of planarizing and polishing for preferential **removal** of silicon oxide
)
- IT 7631-86-9, Silica, processes
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (fumed, Cabot's Semi-Sperse.COPYRGT. 25, Cab-O-Sperse SC-1; system, compn. and method of planarizing and polishing for preferential **removal** of silicon oxide)
- IT 7429-90-5, Aluminum, processes 7439-88-5, Iridium, processes 7440-06-4, Platinum, processes 7440-18-8, Ruthenium, processes 7440-25-7, Tantalum, processes 7440-32-6, Titanium, processes 7440-33-7, Tungsten, processes 7440-50-8, Copper, processes 7440-57-5, Gold, processes
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (metal substrate polishing; system, compn. and method of planarizing and polishing for preferential **removal** of silicon oxide)
- IT 9002-86-2, Polyvinyl chloride 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9003-53-6, Polystyrene 24981-14-4, Polyvinyl fluoride
 RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (polishing pad; system, compn. and method of planarizing and polishing for preferential **removal** of silicon oxide)
- IT 10344-93-1, Acrylate, processes
 RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (polymer, polishing pad, rheol. control agents, vinyl; system, compn.

and method of planarizing and polishing for preferential
removal of silicon oxide)

IT 409-21-2, Silicon carbide (SiC), processes 11104-08-8, Nickel phosphide
11116-16-8, Titanium nitride 11130-73-7, Tungsten carbide 12033-62-4,
Tantalum nitride 37359-53-8, Tungsten nitride

RL: PEP (Physical, engineering or chemical process); PROC (Process)
(substrate polishing; system, compn. and method of
planarizing and polishing for preferential removal of silicon
oxide)

IT 622-93-5

RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical
process); PROC (Process); USES (Uses)

(system, compn. and method of planarizing and polishing for
preferential removal of silicon oxide)

IT 7732-18-5, Water, processes

RL: PEP (Physical, engineering or chemical process); PROC (Process)
(system, compn. and method of planarizing and polishing for
preferential removal of silicon oxide)

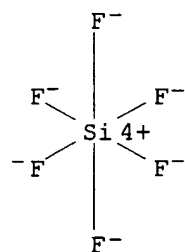
IT 16961-83-4, Fluosilicic acid 17439-11-1, Fluorotitanic
acid

RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical
process); PROC (Process); USES (Uses)

(compn. for polishing; system, compn. and method of planarizing and
polishing for preferential removal of silicon oxide
)

RN 16961-83-4 HCAPLUS

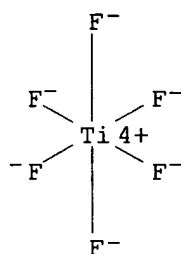
CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



2 H⁺

RN 17439-11-1 HCAPLUS

CN Titanate(2-), hexafluoro-, dihydrogen, (OC-6-11)- (9CI) (CA INDEX NAME)

2 H⁺

L60 ANSWER 14 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 2001:704555 HCAPLUS

DN 135:361233

TI A method of removing metal ions from silicate glasses for recycling by liquid-phase deposition

AU Homma, T.

CS Center for Informative and Environmental Materials, Faculty of Engineering, Department of Electronic Engineering, Shibaura Institute of Technology, Research Organization for Advanced Engineering, Minato-ku, Tokyo, 108-8548, Japan

SO Journal of Non-Crystalline Solids (2001), 291(1,2), 25-31

CODEN: JNCSBJ; ISSN: 0022-3093

PB Elsevier Science B.V.

DT Journal

LA English

CC 57-1 (Ceramics)

Section cross-reference(s): 60

AB A method of removing metal ions from silicate glasses for recycling was studied. This method utilizes a liq.-phase deposition (LPD) technique using a hydrofluosilicic acid (H₂SiF₆) aq. soln. supersatd. with silica. Silicate glass powder prepd. from a glass bottle was dissolved in aq. hydrofluoric acid (HF) soln. Fluorinated silicon oxide (SiOF) sepd. from the H₂SiF₆, and then an LPD-SiOF gel was formed in the supersatd. H₂SiF₆ aq. soln. Almost all ratios of metals to silicon (Si) were reduced by .gtoreq.1 order of magnitude. The LPD-SiOF powder formed by drying the LPD-SiOF gel at 23.degree.C showed a different chem. bonding structure than that of the initial silicate glass powder. The LPD-SiOF powder showed a cluster structure of spheres 1-2 .mu.m in diam. A possible mechanism for removal of the non-Si primary component metal oxides and other impurity metal ions is proposed. The features of this method and a possible application for recycled silica are also discussed.

ST silica recovery silicate glass metal **oxide** liq phase **removal**

IT **Oxides (inorganic)**, processesRL: **REM (Removal or disposal)**; PROC (Process)

(impurity; liq.-phase deposition method for **removing** metal ions from silicate glasses for recycling of silica)

IT Recycling

(liq.-phase deposition method for **removing** metal ions from silicate glasses for recycling of silica)

- IT Silicate glasses
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(liq.-phase deposition method for **removing** metal ions from silicate glasses for recycling of silica)
- IT 116305-88-5P, Silicon fluoride oxide
RL: PNU (Preparation, unclassified); PREP (Preparation)
(gel, intermediate phase; liq.-phase deposition method for **removing** metal ions from silicate glasses for recycling of silica)
- IT 7664-39-3, Hydrofluoric acid, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(glass dissoln. agent; liq.-phase deposition method for **removing** metal ions from silicate glasses for recycling of silica)
- IT 7429-90-5, Aluminum, processes 7439-89-6, Iron, processes 7439-92-1, Lead, processes 7439-93-2, Lithium, processes 7439-95-4, Magnesium, processes 7439-96-5, Manganese, processes 7440-02-0, Nickel, processes 7440-23-5, Sodium, processes 7440-24-6, Strontium, processes 7440-32-6, Titanium, processes 7440-36-0, Antimony, processes 7440-39-3, Barium, processes 7440-42-8, Boron, processes 7440-47-3, Chromium, processes 7440-48-4, Cobalt, processes 7440-50-8, Copper, processes 7440-55-3, Gallium, processes 7440-56-4, Germanium, processes 7440-66-6, Zinc, processes 7440-67-7, Zirconium, processes
RL: REM (Removal or disposal); PROC (Process)
(impurity; liq.-phase deposition method for **removing** metal ions from silicate glasses for recycling of silica)
- IT 7631-86-9P, Silica, preparation
RL: PUR (Purification or recovery); PREP (Preparation)
(liq.-phase deposition method for **removing** metal ions from silicate glasses for recycling of silica)
- RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
- (1) Anon; The Handbook of Glass Manufacture, 3rd Ed 1984, V1, P5
 - (2) Doremus, R; Glass Science, 2nd Ed 1994, P13
 - (3) Doremus, R; Glass Science, 2nd Ed 1994, P94
 - (4) Goda, T; Proceedings of Materials Research Society Symposium 1988, V105, P283 HCAPLUS
 - (5) Hishinuma, A; Proceedings of Applied Surface Science Conference 1991, V48&49, P405
 - (6) Homma, T; IEEE Trans Instrum Meas 1998, V47, P698 HCAPLUS
 - (7) Homma, T; J Electrochem Soc 1993, V140, P2410 HCAPLUS
 - (8) Homma, T; J Electrochem Soc 2000, V147, P1141 HCAPLUS
 - (9) Homma, T; Thin Solid Films 1994, V249, P15 HCAPLUS
 - (10) Kawahara, H; Proceedings of the Society of Photo-Optical Instrumentation Engineers (SPIE), Glasses for Optoelectronics II 1991, V1513, P198 HCAPLUS
 - (11) Lave, L; J Environ Eng 1999, V125, P944 HCAPLUS
 - (12) Meyer, K; Ber Bunsenges Phys Chem 1996, V100, P1523 HCAPLUS
 - (13) Nagayama, H; J Electrochem Soc 1988, V138, P2013
 - (14) Nyquist, R; Infrared Spectra of Inorganic Compounds 1971, P9
 - (15) Payne, D; Glass Technol 1994, V35, P230 HCAPLUS
 - (16) Pliskin, W; J Electrochem Soc 1965, V112, P1013 HCAPLUS
 - (17) Sze, S; Semiconductor Devices Physics and Technology 1985, P452
 - (18) Yeh, C; IEEE Trans Electron Devices 1994, V41, P173 HCAPLUS
 - (19) Yeh, C; IEEE Trans Electron Devices 1995, V42, P307 HCAPLUS
 - (20) Yeh, C; J Electrochem Soc 1994, V141, P2410
- IT 7664-39-3, Hydrofluoric acid, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)

(glass dissoln. agent; liq.-phase deposition method for
removing metal ions from silicate glasses for recycling of
 silica)

RN 7664-39-3 HCAPLUS

CN Hydrofluoric acid (8CI, 9CI) (CA INDEX NAME)

HF

IT **7631-86-9P**, Silica, preparation

RL: PUR (Purification or recovery); PREP (Preparation)

(liq.-phase deposition method for **removing** metal ions from
 silicate glasses for recycling of silica)

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L60 ANSWER 15 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 2001:676241 HCAPLUS

DN 135:228865

TI Acid treatment of activated carbon for its use in gas purification

IN Monereau, Christian; Moreau, Serge

PA L'Air Liquide, Societe Anonyme pour l'Etude et l'Exploitation des Procedes
 Georges Claude, Fr.

SO Eur. Pat. Appl., 12 pp.

CODEN: EPXXDW

DT Patent

LA French

IC ICM C01B031-12

CC 49-1 (Industrial Inorganic Chemicals)

Section cross-reference(s): 48

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1132341	A1	20010912	EP 2001-400517	20010228
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	FR 2806072	A1	20010914	FR 2000-2925	20000307
	FR 2806072	B1	20020607		
	US 2002010093	A1	20020124	US 2001-799736	20010307
PRAI	FR 2000-2925	A	20000307		

AB Activated carbon for purifn. of hydrogen, syngas from reforming or
 cracking of hydrocarbons, nitrogen or air is treated with acid to
remove metal oxide impurities, such as SiO₂,
 Fe₂O₃, Al₂O₃, Na₂O, CuO, CaO, MgO and K₂O. The source of carbon can be
 from natural carbons (coal, lignite), or synthetic carbons, esp. those
 derived from polymers or plant sources (esp. coconut shells). Acids used
 for the treatment are HCl, HF, HNO₃ and H₂SO₄. The mixt. is neutralized
 using alkali or earth alkali hydroxide solns. or alkali or earth alkali
 salts of weak acids, subsequently rinsed with distd. or deionized water
 and dried at 80-100 .degree.C. The total residual amt. of impurities
 should be less than 1.5 wt.%, less than 0.1 wt.% for each **metal**
 oxide and less than 0.03 wt.% of iron oxide. The adsorption process using

the carbon is a PSA or TSA-type process using 2-12 different adsorbent layers, such as X and A-type zeolites, faujasite exchanged with at least 70% lithium or calcium, faujasite with a Si/Al ratio between 1-1.25, active alumina or silica gel. The particle size of the carbon granules should be 1-5 mm. This process is used to remove impurities, esp. H₂S, COS and mercaptans from gases.

- ST carbon active gas purifn nitrogen hydrogen air; acid treatment
metal oxide carbon active gas purifn; PSA TSA adsorbent carbon
 active gas purifn; mercaptan removal gas active carbon; hydrogen sulfide
 removal gas active carbon
- IT A zeolites
 Faujasite-type zeolites
 X zeolites
 RL: PEP (Physical, engineering or chemical process); TEM (Technical or
 engineered material use); PROC (Process); USES (Uses)
 (adsorbent; acid treatment of activated carbon for its use in gas
 purifn.)
- IT Alkali **metal** hydroxides
 Alkaline earth hydroxides
 RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or
 reagent); USES (Uses)
 (neutralization agent; acid treatment of activated carbon for its use
 in gas purifn.)
- IT Adsorption
 (pressure-swing; acid treatment of activated carbon for its use in gas
 purifn.)
- IT Air
 Synthesis gas
 (purifn. of; acid treatment of activated carbon for its use in gas
 purifn.)
- IT Thiols (organic), processes
 RL: PEP (Physical, engineering or chemical process); **REM (Removal or
 disposal)**; PROC (Process)
 (**removal** of; acid treatment of activated carbon for its use
 in gas purifn.)
- IT Adsorption
 (thermal-swing; acid treatment of activated carbon for its use in gas
 purifn.)
- IT Alkali **metal** salts
 Alkaline earth salts
 RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or
 reagent); USES (Uses)
 (weak acid, neutralization agent; acid treatment of activated carbon
 for its use in gas purifn.)
- IT 7647-01-0, Hydrochloric acid, reactions **7664-39-3**, Hydrofluoric
 acid, reactions 7664-93-9, Sulfuric acid, reactions 7697-37-2, Nitric
 acid, reactions
 RL: NUU (Other use, unclassified); **RCT (Reactant)**; RACT
 (Reactant or reagent); USES (Uses)
 (acid treatment of activated carbon for its use in gas purifn.)
- IT 7440-44-0P, Carbon, preparation
 RL: PEP (Physical, engineering or chemical process); PUR (Purification or
 recovery); TEM (Technical or engineered material use); PREP (Preparation);
 PROC (Process); USES (Uses)
 (active; acid treatment of activated carbon for its use in gas purifn.)
- IT 1333-74-0P, Hydrogen, preparation 7727-37-9P, Nitrogen, preparation
 RL: PEP (Physical, engineering or chemical process); PUR (Purification or
 recovery); PREP (Preparation); PROC (Process)

(purifn. of; acid treatment of activated carbon for its use in gas purifn.)

IT 1344-28-1, Alumina, reactions **7631-86-9**, Silica, reactions
 RL: PEP (Physical, engineering or chemical process); **RCT**
(Reactant); **REM (Removal or disposal)**; TEM (Technical or
 engineered material use); PROC (Process); RACT (Reactant or reagent); USES
 (Uses)
 (removal of; acid treatment of activated carbon for its use
 in gas purifn.)

IT 463-58-1, Carbon **oxide** sulfide, COS 7783-06-4, Hydrogen
 sulfide (H₂S), processes
 RL: PEP (Physical, engineering or chemical process); **REM (Removal or
 disposal)**; PROC (Process)
 (removal of; acid treatment of activated carbon for its use
 in gas purifn.)

IT 1305-78-8, Calcium **oxide**, reactions 1309-37-1, Iron
oxide, Fe₂O₃, reactions 1309-48-4, Magnesium **oxide**,
 reactions 1313-59-3, Sodium **oxide**, reactions 1317-38-0,
 Copper **oxide**, CuO, reactions 12136-45-7, Potassium
oxide, reactions
 RL: RCT (Reactant); **REM (Removal or disposal)**; PROC (Process);
 RACT (Reactant or reagent)
 (removal of; acid treatment of activated carbon for its use
 in gas purifn.)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
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 (2) Anon; PATENT ABSTRACTS OF JAPAN 1980, V004(022), PC-074
 (3) Pintsch Bamag Ag; GB 949952 A 1964 HCAPLUS
 (4) Toho Rayon Co Ltd; JP 54162692 A 1979 HCAPLUS

IT **7664-39-3**, Hydrofluoric acid, reactions
 RL: NUU (Other use, unclassified); **RCT (Reactant)**; RACT
 (Reactant or reagent); USES (Uses)
 (acid treatment of activated carbon for its use in gas purifn.)

RN 7664-39-3 HCAPLUS
 CN Hydrofluoric acid (8CI, 9CI) (CA INDEX NAME)

HF

IT **7631-86-9**, Silica, reactions
 RL: PEP (Physical, engineering or chemical process); **RCT**
(Reactant); **REM (Removal or disposal)**; TEM (Technical or
 engineered material use); PROC (Process); RACT (Reactant or reagent); USES
 (Uses)
 (removal of; acid treatment of activated carbon for its use
 in gas purifn.)

RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L60 ANSWER 16 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 2001:473001 HCAPLUS

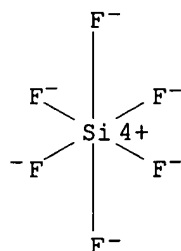
KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

DN 135:64947
 TI Epoxy-functional polymer **coating** on metal **strip** for
 preventing corrosion and promoting spot weldability
 IN Hauser, Brian T.; Gray, Ralph C.; Nugent, Richard M., Jr.; White, Michael
 L.
 PA Ppg Industries Ohio, Inc., USA
 SO PCT Int. Appl., 45 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM C23C022-00
 CC 56-6 (**Nonferrous Metals** and Alloys)
 Section cross-reference(s): 42

FAN.CNT 6

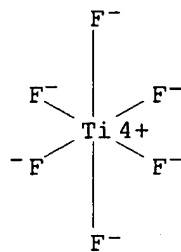
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001046495	A2	20010628	WO 2000-US32878	20001204
	WO 2001046495	A3	20020124		
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	US 6312812	B1	20011106	US 1999-469259	19991221
	EP 1240363	A2	20020918	EP 2000-983893	20001204
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			
	BR 2000016910	A	20021022	BR 2000-16910	20001204
PRAI	US 1999-469259	A	19991221		
	US 1998-203833	A2	19981201		
	US 1999-133571P	P	19990511		
	US 1999-133617P	P	19990511		
	US 1999-309849	A3	19990511		
	US 1999-309850	A3	19990511		
	WO 2000-US32878	W	20001204		
AB	Metal, alloy, or steel substrates are coated by: (a) pretreatment with a transition metal-contg. interlayer having Group IIIB, Group IVB, and/or lanthanide metal compds.; and (b) coating with a reaction product of epoxy-functional material with P-contg., amine-contg., and/or S-contg. compds. The pretreatment is typically based on fluorozirconic acid or fluorotitanic acid, and forms an interlayer at 0.1-500 mg/m2 for promoting polymn. of the top resin coating. The 2-stage coating can be combined into a single-stage process, and is free of Cr and Ni as conventional coating components having potential pollution problems. The process is suitable for continuous coating of galvanized steel sheets by dip, spray, or roll methods with the assocd. drying and baking. The coated strip can be finished by deposition of elec.-conductive (esp. metal) powder for spot welding by elec.-resistance method.				
ST	epoxy functional polymer coating metal strip ; transition metal compd interlayer polymer coating; polymer composite coating metal strip spot welding				
IT	Galvanized steel RL: PEP (Physical, engineering or chemical process); PROC (Process) (coating of; epoxy-functional polymer coating on metal				

- strip** for preventing corrosion)
- IT Epoxy resins, processes
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (coating with; epoxy-functional polymer coating free of Cr and Ni on metal sheets)
- IT Group IIIB element compounds
 Group IVB element compounds
 Rare earth compounds
 RL: TEM (Technical or engineered material use); USES (Uses)
 (interlayer, for coating; epoxy-functional polymer coating free of Cr and Ni on metal sheets)
- IT Coating materials
 (polymers; epoxy-functional polymer coating free of Cr and Ni on metal sheets)
- IT Welding of metals
 (spot, polymer coating for; epoxy-functional polymer coating free of Cr and Ni on metal sheets for spot welding)
- IT 7429-90-5, Aluminum, processes 7439-95-4, Magnesium, processes
 7440-66-6, Zinc, processes 12597-68-1, Stainless steel, processes
 12597-69-2, Steel, processes
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (coating of; epoxy-functional polymer **coating** on metal **strip** for preventing corrosion)
- IT 110-97-4D, Diisopropanol amine, derivs. 1333-83-1, Sodium bifluoride
 1341-49-7, Ammonium bifluoride 6303-21-5D, Phosphinic acid, derivs.
 7429-91-6D, Dysprosium, compds., uses 7440-00-8D, Neodymium, compds.,
 uses 7440-10-0D, Praseodymium, compds., uses 7440-19-9D, Samarium,
 compds., uses 7440-32-6D, Titanium, compds., uses 7440-45-1D, Cerium,
 compds., uses 7440-53-1D, Europium, compds., uses 7440-58-6D, Hafnium,
 compds., uses 7440-65-5D, Yttrium, compds., uses 7440-67-7D,
 Zirconium, compds., uses 7664-38-2D, Phosphoric acid, derivs., uses
 7664-39-3D, Hydrofluoric acid, salts, uses 7783-64-4D, Zirconium
 fluoride, alkali salts 7789-29-9, Potassium bifluoride 12021-95-3
 13598-36-2D, Phosphonic acid, derivs. 13826-66-9, Zirconyl nitrate
 16923-95-8, Potassium hexafluorozirconate **16961-83-4**,
 Fluorosilicic acid **17439-11-1**, Fluorotitanic acid 22829-17-0,
 Ammonium zirconium carbonate
 RL: MOA (Modifier or additive use); USES (Uses)
 (interlayer with, for resin coating; epoxy-functional polymer **coating** on metal **strip** for preventing corrosion)
- IT 7439-89-6, Iron, uses 7440-02-0, Nickel, uses 7440-33-7, Tungsten,
 uses 7782-42-5, Graphite, uses 12751-22-3, Iron phosphide
 RL: MOA (Modifier or additive use); USES (Uses)
 (powder, resin coating with; epoxy-functional polymer **coating**
 on metal **strip** for protection and spot weldability)
- IT **16961-83-4**, Fluorosilicic acid **17439-11-1**, Fluorotitanic
 acid
 RL: MOA (Modifier or additive use); USES (Uses)
 (interlayer with, for resin coating; epoxy-functional polymer **coating** on metal **strip** for preventing corrosion)
- RN 16961-83-4 HCAPLUS
- CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)

2 H⁺

RN 17439-11-1 HCAPLUS

CN Titanate(2-), hexafluoro-, dihydrogen, (OC-6-11)- (9CI) (CA INDEX NAME)

2 H⁺

L60 ANSWER 17 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 2001:453366 HCAPLUS

DN 135:39715

TI Different sacrificial layer thickness under fixed and movable electrodes for capacitive acceleration sensor fabrication

IN Banjac, Branko; Fischer, Frank; Schielein, Doris; Bueche, Dirk

PA Robert Bosch G.m.b.H., Germany

SO PCT Int. Appl., 34 pp.

CODEN: PIXXD2

DT Patent

LA German

IC ICM G01P015-08

ICS B81B003-00

CC 76-3 (Electric Phenomena)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001044822	A1	20010621	WO 2000-DE4171	20001124
	W: JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	DE 19960094	A1	20010705	DE 1999-19960094	19991214

EP 1169650 A1 20020109 EP 2000-988643 20001124

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO

PRAI DE 1999-19960094 A 19991214

WO 2000-DE4171 W 20001124

AB Micromech. prodn. of layer-shaped fixed and movable electrodes (141, 143) of a semiconductor element (capacitive acceleration sensor), said electrodes lying freely in a given area on a **substrate** (11), whereby a sacrificial layer (91, 101) lying between the **substrate** (11) and the fixed and movable electrodes (142, 143) is removed in an etching step to expose the electrodes (142, 143) relative to the **substrate** (11), whereby the thickness (d1) of the sacrificial layer (91) lying in the area (A) of the fixed electrode (142) is smaller than the thickness (d2) of the sacrificial layer (91, 101) lying in the area (B) of the movable electrodes (143). The sacrificial layer (91, 101) consists of a 1st sacrificial layer (91) and a 2nd sacrificial layer (101) made of Si oxide or a phosphosilicate glass. This is done to compensate for microscopically inhomogeneous etching rates in a H₂O, HF gaseous phase, which emerge as a result of intrinsic voltage gradients in doped polycryst. Si or Ge electrodes (142, 143) that are anchored on one or two sides.

ST capacitor electrode accelerometer silica sacrificial layer fabrication

IT Accelerometers

Capacitor electrodes

Capacitors

Etching

Semiconductor sensors

Thickness

(different sacrificial **layer** thickness under fixed and movable electrodes for capacitive acceleration sensor fabrication)

IT Phosphosilicate glasses

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(different sacrificial layer thickness under fixed and movable electrodes for capacitive acceleration sensor fabrication)

IT 7440-56-4, Germanium, processes

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(different sacrificial layer thickness under fixed and movable electrodes for capacitive acceleration sensor fabrication)

IT 7631-86-9, Silicon dioxide, properties

RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); **RCT (Reactant)**; **REM (Removal or disposal)**; PROC (Process); RACT (Reactant or reagent); USES (Uses)

(different sacrificial layer thickness under fixed and movable electrodes for capacitive acceleration sensor fabrication)

IT 7440-21-3, Silicon, processes

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(electrodes; different sacrificial layer thickness under fixed and movable electrodes for capacitive acceleration sensor fabrication)

IT 7664-39-3, Hydrogen fluoride, processes

RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); **RCT (Reactant)**; PROC (Process); RACT (Reactant or reagent); USES (Uses)

(**etchant**, gaseous; different sacrificial **layer** thickness under fixed and movable electrodes for capacitive acceleration sensor fabrication)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

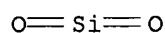
RE

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- (2) Bosch; DE 19734113 A 1999
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IT 7631-86-9, Silicon dioxide, properties
 RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); **RCT (Reactant)**; **REM (Removal or disposal)**; PROC (Process); RACT (Reactant or reagent); USES (Uses)
 (different sacrificial layer thickness under fixed and movable electrodes for capacitive acceleration sensor fabrication)

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 7664-39-3, Hydrogen fluoride, processes
 RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); **RCT (Reactant)**; PROC (Process); RACT (Reactant or reagent); USES (Uses)
 (**etchant**, gaseous; different sacrificial **layer** thickness under fixed and movable electrodes for capacitive acceleration sensor fabrication)

RN 7664-39-3 HCAPLUS

CN Hydrofluoric acid (8CI, 9CI) (CA INDEX NAME)

HF

L60 ANSWER 18 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 2001:421951 HCAPLUS

DN 135:160643

TI Enhancement of **metal**-semiconductor barrier height with superthin silicon dioxide films deposited on gallium arsenide by liquid phase deposition

AU Huang, C. J.

CS Department of Electrical Engineering, Southern Taiwan University of Technology, Yung-Kang City, Tainan, 70101, Taiwan

SO Journal of Applied Physics (2001), 89(11, Pt. 1), 6501-6505
 CODEN: JAPIAU; ISSN: 0021-8979

PB American Institute of Physics

DT Journal

LA English

CC 76-3 (Electric Phenomena)

Section cross-reference(s): 75

AB This study presents a method for surface passivation using SiO₂. The proposed method showed great effectiveness on **metal**-semiconductor barrier height enhancement. A high quality SiO₂ layer is developed via liq. phase deposition, a method which naturally leaves a doping-level F residue in the SiO₂. The addn. of F to enhance the Schottky barrier height (SBH) is 1st discussed. Exptl. results are presented. It is found that this F addn. enhances the Schottky barrier

height, which allows a larger pos. gate bias for enhancement mode **metal**-semiconductor field-effect transistors, thus permitting the fabrication of digital logic circuits with improved noise margins and relaxed tolerance with regard to device threshold voltage uniformity. The SBH to n-Ga arsenide (GaAs) is .apprx.0.7 eV. Finally, the effective barrier height of the **metal**-insulator-semiconductor structure reached 1.03 eV after annealing. The enhancement of SBH has been attributed to the formation of these stable interface layers. A model for F-enhanced SiO₂ SBH enhancement is also presented.

- ST **metal** semiconductor barrier height superthin silica film gallium arsenide; liq phase deposition superthin silica film Schottky barrier height; model fluorine enhancement Schottky barrier height superthin silica film
- IT Electric capacitance-potential relationship
Electric current-potential relationship
(Al/silica/GaAs; enhancement of **metal**-semiconductor barrier height with superthin silicon dioxide films deposited on gallium arsenide by liq. phase deposition)
- IT Tunneling
(electron; enhancement of **metal**-semiconductor barrier height with superthin silicon dioxide films deposited on gallium arsenide by liq. phase deposition)
- IT Annealing
Liquid phase epitaxy
Logic circuits
MISFET (transistors)
Schottky diodes
Semiconductor device fabrication
Threshold potential
(enhancement of **metal**-semiconductor barrier height with superthin silicon dioxide films deposited on gallium arsenide by liq. phase deposition)
- IT Schottky barrier
(height; enhancement of **metal**-semiconductor barrier height with superthin silicon dioxide films deposited on gallium arsenide by liq. phase deposition)
- IT Passivation
(layer; enhancement of **metal**-semiconductor barrier height with superthin silicon dioxide films deposited on gallium arsenide by liq. phase deposition)
- IT Simulation and Modeling, physicochemical
(model for fluorine enhancement of silica SBH; enhancement of **metal**-semiconductor barrier height with superthin silicon dioxide films deposited on gallium arsenide by liq. phase deposition)
- IT IR spectra
(silica film by liq. phase deposition; enhancement of **metal**-semiconductor barrier height with superthin silicon dioxide films deposited on gallium arsenide by liq. phase deposition)
- IT 11105-41-2
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(backside contact; enhancement of **metal**-semiconductor barrier height with superthin silicon dioxide films deposited on gallium arsenide by liq. phase deposition)
- IT 7664-39-3, Hydrofluoric acid, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(backside **oxide removal**; enhancement of **metal**-semiconductor barrier height with superthin silicon

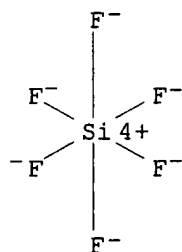
- dioxide films deposited on gallium arsenide by liq. phase deposition)
- IT 1303-00-0, Gallium arsenide, processes
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (enhancement of **metal**-semiconductor barrier height with
 superthin silicon dioxide films deposited on gallium arsenide by liq.
 phase deposition)
- IT 7631-86-9, Silica, properties
 RL: PEP (Physical, engineering or chemical process); PRP (Properties);
 PROC (Process)
 (enhancement of **metal**-semiconductor barrier height with
 superthin silicon dioxide films deposited on gallium arsenide by liq.
 phase deposition)
- IT 14762-94-8, Atomic fluorine, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (fluorine enhancement of silica SBH; enhancement of **metal**
 -semiconductor barrier height with superthin silicon dioxide films
 deposited on gallium arsenide by liq. phase deposition)
- IT 1343-98-2, Silicic acid 10043-35-3, Boric acid, processes
 16961-83-4, Silicate(2-), hexafluoro-, dihydrogen
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (liq. phase deposition of silica; enhancement of **metal**
 -semiconductor barrier height with superthin silicon dioxide films
 deposited on gallium arsenide by liq. phase deposition)
- IT 1336-21-6, Ammonium hydroxide
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (**substrate** etching; enhancement of **metal**
 -semiconductor barrier height with superthin silicon dioxide films
 deposited on gallium arsenide by liq. phase deposition)
- IT 7429-90-5, Aluminum, processes
 RL: DEV (Device component use); PEP (Physical, engineering or chemical
 process); PROC (Process); USES (Uses)
 (vacuum deposit front contact; enhancement of **metal**
 -semiconductor barrier height with superthin silicon dioxide films
 deposited on gallium arsenide by liq. phase deposition)

RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD

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 IT 16961-83-4, Silicate(2-), hexafluoro-, dihydrogen
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (liq. phase deposition of silica; enhancement of **metal**
 -semiconductor barrier height with superthin silicon dioxide films
 deposited on gallium arsenide by liq. phase deposition)
 RN 16961-83-4 HCAPLUS
 CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



2 H⁺.

L60 ANSWER 19 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 2001:178420 HCAPLUS
 DN 134:215951
 TI Liquid compositions for removal of oxides from inter-level dielectrics
 IN Jagannathan, Rangarajan; Madden, Karen P.; McCullough, Kenneth J.;
 Okorn-Schmidt, Harald F.; Pope, Keith R.; Rath, David L.
 PA International Business Machines Corporation, USA
 SO U.S., 5 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 IC ICM H01L021-4763
 ICS H01L021-302
 NCL 438622000
 CC 76-3 (Electric Phenomena)
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6200891	B1	20010313	US 1998-133537	19980813
PRAI US 1998-133537		19980813		

AB Oxides such as those commonly used in inter-level dielects. may be removed
 employing a liq. compn. contg. a fluoride-contg. compd. and an org.
 solvent. Preferred compns. are substantially nonaq. and include an
 anhydride. Improved methods for selective removal of oxides, esp. for

removal of Si oxides where pre-exposed (or conductive metal-contg.) features are present, where metal (conductive metal-contg.) features are to be exposed by the desired oxide removal, or where the silicon oxide otherwise contacts metal (or conductive metal - contg.) features are provided.

- ST semiconductor device fabrication etching removal dielec oxide
- IT Alcohols, processes
Aldehydes, processes
Amines, processes
Esters, processes
Ethers, processes
Hydrocarbons, processes
Imides
Ketones, processes
Lactones
Thiols (organic), processes
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(etching solvent; liq. compns. for removal of oxides from inter-level dielects.)
- IT Borates
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(fluoro-, etchant; liq. compns. for removal of oxides from inter-level dielects.)
- IT Electric insulators
Etching
Integrated circuits
Interconnections (electric)
Semiconductor device fabrication
(liq. compns. for removal of oxides from inter-level dielects.)
- IT **Oxides (inorganic)**, processes
RL: **REM (Removal or disposal)**; PROC (Process)
(liq. compns. for removal of **oxides** from inter-level dielects.)
- IT 7440-25-7, Tantalum, processes 7440-33-7, Tungsten, processes
7440-50-8, Copper, processes 11099-19-7 12033-62-4, Tantalum nitride (TaN) 25583-20-4, Titanium nitride (TiN)
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(device conductive layer; liq. compns. for removal of oxides from inter-level dielects.)
- IT 7782-44-7, Oxygen, processes 10028-15-6, Ozone, processes
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(dielec. layer fabrication; liq. compns. for removal of oxides from inter-level dielects.)
- IT 78-10-4, Tetraethoxysilane
RL: RCT (Reactant); RACT (Reactant or reagent)
(dielec. layer fabrication; liq. compns. for removal of oxides from inter-level dielects.)
- IT 110-18-9, N,N,N',N'-Tetramethylethylenediamine 429-42-5, Tetrabutylammonium tetrafluoroborate **7664-39-3**, Hydrofluoric acid, processes 7783-47-3, Tin bifluoride 12125-01-8, Ammonium fluoride 16872-11-0, Fluoroboric acid 17949-86-9, Aluminum fluoride (Al₂F₆) 127386-54-3, Antimony fluoride
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(etchant; liq. compns. for removal of oxides from inter-level dielects.)
 IT 75-09-2, Methylene chloride, processes 88-99-3D, Phthalic acid, Me and Et esters 93-58-3, Methyl benzoate 96-47-9, 2-Methyltetrahydrofuran 96-48-0 100-21-0D, Terephthalic acid, Me and Et esters 100-51-6, Benzyl alcohol, processes 108-24-7, Acetic anhydride 108-32-7, Propylene carbonate 108-94-1, Cyclohexanone, processes 111-96-6, Diglyme 120-92-3, Cyclopentanone 121-91-5D, Isophthalic acid, Me and Et esters 872-50-4, N-Methylpyrrolidone, processes 2591-86-8, N-Formylpiperidine 4394-85-8, N-Formylmorpholine
 RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(etching solvent; liq. compns. for removal of oxides from inter-level dielects.)
 IT 59271-56-6, Phosphorus silicon oxide 65381-39-7, Boron silicon oxide 197389-01-8, Boron phosphorus silicon oxide
 RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (inter-level dielec.; liq. compns. for removal of oxides from inter-level dielects.)

IT 7631-86-9, Silica, processes
 RL: REM (Removal or disposal); PROC (Process)
 (liq. compns. for removal of oxides from inter-level dielects.)

IT 7429-90-5, Aluminum, uses 7440-32-6, Titanium, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (liq. compns. for removal of oxides from inter-level dielects.)

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 IT 7664-39-3, Hydrofluoric acid, processes
 RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (etchant; liq. compns. for removal of oxides from inter-level dielects.)
 RN 7664-39-3 HCAPLUS
 CN Hydrofluoric acid (8CI, 9CI) (CA INDEX NAME)

HF

IT 7631-86-9, Silica, processes
 RL: REM (Removal or disposal); PROC (Process)
 (liq. compns. for removal of oxides from inter-level dielects.)
 RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L60 ANSWER 20 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 2001:162241 HCAPLUS

KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

DN 134:185144
 TI Decontamination of matrices containing actinide **oxides**
 IN Villarreal, Robert
 PA Los Alamos National Laboratory (LANL), USA
 SO U. S. Pat. Appl., 30 pp., Avail. NTIS Order No. PAT-APPL-8-975 157.
 CODEN: XAXXAV
 DT Patent
 LA English
 CC 71-11 (Nuclear Technology)
 FAN.CNT 1

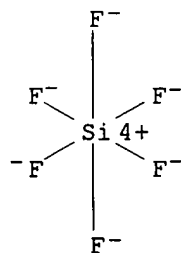
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 975157	A0	20001211	US 1997-975157	19971120
PRAI	US 1997-975157		19971120		

AB There is provided a method for **removing** actinides and actinide **oxides**, particularly fired actinides, from soil and other contaminated matrixes, comprising: (a) contacting a contaminated material with a soln. of at least one inhibited fluoride and an acid to form a mixt.; (b) heating the mixt. of contaminated material and soln. to a temp. in the range from about 30 .degree.C to about 90 .degree.C while stirring; (c) sepg. the soln. from any undissolved matrix material in the mixt.; (d) washing the undissolved matrix material to **remove** any residual materials; and (e) drying and returning the treated matrix material to the environment.

ST soln decontamination matrixes contg plutonium actinide **oxides**
 IT Soils
 (decontamination from plutonium and actinide **oxides**)
 IT Actinide **oxides**
 Actinides
 RL: PEP (Physical, engineering or chemical process); **REM (Removal or disposal)**; PROC (Process)
 (decontamination of matrixes contg.)
 IT Matrix media
 (decontamination of matrixes contg. actinide **oxides**)
 IT Decontamination
 (of matrixes contg. actinide **oxides**)
 IT Heating
 (of mixt. of contaminated material and soln. in process of decontamination from plutonium and actinide **oxides**)
 IT 11116-03-3, Plutonium **oxide**
 RL: PEP (Physical, engineering or chemical process); **REM (Removal or disposal)**; PROC (Process)
 (decontamination of matrixes contg.)
 IT 60-00-4, EDTA, processes 584-08-7, Potassium carbonate 7681-52-9, Sodium hypochlorite 7697-37-2, Nitric acid, processes 7775-14-6, Sodium dithionite 10035-10-6, Hydrobromic acid, processes 10043-35-3, Boric acid, processes 13537-32-1, Fluorophosphoric acid 16065-90-0, Cerium 4+, processes 16872-11-0, Tetrafluoroboric acid **16961-83-4**, Hexafluorosilicic acid
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
 (decontamination of matrixes contg. actinides **oxide** with soln. contg.)
 IT **16961-83-4**, Hexafluorosilicic acid
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
 (decontamination of matrixes contg. actinides **oxide** with soln. contg.)

RN 16961-83-4 HCAPLUS

CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)

⊙2 H⁺

L60 ANSWER 21 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 2001:143581 HCAPLUS

DN 134:182720

TI Treatment agent and method for harmful waste gas containing silicon chloride

IN Otsuka, Kenji; Arakawa, Satoshi; Koura, Nagao

PA Japan Pionics, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B01D053-68

ICS B01D053-34; B01D053-46; B01J020-06

CC 59-4 (Air Pollution and Industrial Hygiene)

Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001054719	A2	20010227	JP 1999-231955	19990818
PRAI	JP 1999-231955		19990818		
AB	The harmful waste gas treatment agent contains CuO, MnO ₂ with .gtoreq.130 m ² /g BET sp. surface area, and an alkali metal hydroxide. Si chloride-contg. waste gas is treated with the agent. Si chloride may be SiH ₃ Cl, SiH ₂ Cl ₂ , SiHCl ₃ . A Si chloride-contg. waste gas emitted from a semiconductor device fabrication app. can safely and efficiently be removed.				
ST	silicon chloride waste gas removal agent; manganese oxide silicon chloride removal agent; semiconductor silicon chloride waste gas agent; alkali metal hydroxide silicon chloride treatment; cupric oxide silicon chloride gas treatment agent				
IT	Waste gases (silicon chloride-contg. waste gas treatment agent and treatment method)				
IT	Chlorides, processes RL: PEP (Physical, engineering or chemical process); POL (Pollutant); REM (Removal or disposal) ; OCCU (Occurrence); PROC (Process) (silicon, removal of; silicon chloride-contg. waste gas treatment agent and treatment method)				

IT Semiconductor device fabrication
(waste gas from; silicon chloride-contg. waste gas treatment agent and treatment method)

IT 4109-96-0, Dichlorosilane **13465-71-9**, Trifluorosilane
13465-78-6, Monochlorosilane
RL: PEP (Physical, engineering or chemical process); POL (Pollutant);
REM (Removal or disposal); OCCU (Occurrence); PROC (Process)
(silicon chloride-contg. waste gas treatment agent and treatment method)

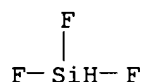
IT 1313-13-9, Manganese dioxide, uses
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(treatment agent contg.; silicon chloride-contg. waste gas treatment agent and treatment method)

IT 1310-58-3, Potassium hydroxide, uses 1310-73-2, Sodium hydroxide, uses
1317-38-0, Cupric oxide, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(treatment agent contg.; silicon chloride-contg. waste gas treatment agent and treatment method)

IT **13465-71-9**, Trifluorosilane
RL: PEP (Physical, engineering or chemical process); POL (Pollutant);
REM (Removal or disposal); OCCU (Occurrence); PROC (Process)
(silicon chloride-contg. waste gas treatment agent and treatment method)

RN 13465-71-9 HCAPLUS

CN Silane, trifluoro- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L60 ANSWER 22 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 2000:699090 HCAPLUS

DN 133:241323

TI Alkaline cleaning and anticorrosion primer treatment of magnesium-alloy die castings

IN Rivera, Jose B.; McMaster, Robert L.; Ike, Charles R.

PA Bulk Chemicals, Inc., USA

SO U.S., 5 pp.
CODEN: USXXAM

DT Patent

LA English

IC ICM B05D003-00

NCL 427307000

CC 56-2 (**Nonferrous Metals** and Alloys)
Section cross-reference(s): 42

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6126997	A	20001003	US 1999-243760	19990203
PRAI	US 1999-243760		19990203		
AB	The Mg-alloy die castings are cleaned and treated for improved corrosion resistance and paint adhesion by: (a) initial cleaning in alk. bath based on aq. NaOH and/or KOH with pH of 10.2-10.8, followed by rinsing in water; (b) pickling treatment in the 2nd bath based on aq. hydroxyacetic acid at				

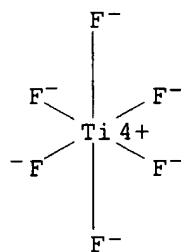
- pH of 3.5-5 with a surfactant, followed by rinsing with water; and (c) chromate-free treatment in the 3rd bath based on aq. silane, aq. polymer with carboxylic or hydroxyl functional groups, and/or Group IVB compd. (esp. **H₂TiF₆** and similar compds.). The pretreated surface is then painted or finished with a decorative coating, without intermediate rinsing stage. The treatment promotes good paint adhesion and corrosion resistance of the castings, and uses environmentally friendly components.
- ST magnesium alloy die cast part cleaning bath; painting cast magnesium coating primer bath
- IT Cast alloys
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (magnesium alloys, **coating** of; alk. **cleaning** and anticorrosion primer treatment of magnesium-alloy die castings)
- IT Pickling
 (of Mg-alloy castings; alk. **cleaning** and anticorrosion primer treatment of magnesium-alloy die castings)
- IT Group IVB element compounds
 Silanes
 RL: MOA (Modifier or additive use); USES (Uses)
 (primer bath contg.; alk. **cleaning** and anticorrosion primer treatment of magnesium-alloy die castings)
- IT 7439-95-4, Magnesium, processes 12634-54-7, AZ91
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (cast, **coating** of; alk. **cleaning** and anticorrosion primer treatment of magnesium-alloy die castings)
- IT 1310-58-3, Potassium hydroxide, uses 1310-73-2, Sodium hydroxide, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (cleaning bath contg.; alk. **cleaning** and anticorrosion primer treatment of magnesium-alloy die castings)
- IT 79-14-1, Hydroxyacetic acid, processes
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (cleaning in; acidic **cleaning** and anticorrosion primer treatment of magnesium-alloy die castings)
- IT 919-30-2, .gamma.-Aminopropyltriethoxysilane 9002-89-5, Polyvinyl alcohol 9003-01-4, Polyacrylic acid 12021-95-3 14044-97-4, Silane, mercapto **17439-11-1**, Fluorotitanic acid
 RL: MOA (Modifier or additive use); USES (Uses)
 (primer bath contg.; alk. **cleaning** and anticorrosion primer treatment of magnesium-alloy die castings)

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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- (12) Ishizaki; US 5645650 1997 HCAPLUS
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- (14) Kusters; US 5043022 1991 HCAPLUS
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 (17) Petrole; US 5700523 1997 HCAPLUS
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 (20) Seibel; US 5244738 1993 HCAPLUS
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 (22) Skar, J; SAE Technical Paper Series, International Congress & Exposition 1997
 (23) Vincent; US 3061467 1962
 IT 17439-11-1, Fluorotitanic acid
 RL: MOA (Modifier or additive use); USES (Uses)
 (primer bath contg.; alk. cleaning and anticorrosion primer treatment of magnesium-alloy die castings)
 RN 17439-11-1 HCAPLUS
 CN Titanate(2-), hexafluoro-, dihydrogen, (OC-6-11)- (9CI) (CA INDEX NAME)

2 H⁺

L60 ANSWER 23 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 1999:808614 HCAPLUS
 DN 132:43706
 TI Fabrication of a DRAM capacitor having a rough storage node plate
 IN Hsiao, Yung-Kuan; Wang, Chen-Jong
 PA Taiwan Semiconductor Manufacturing Company, Taiwan
 SO U.S., 11 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 IC ICM H01L021-70
 NCL 438396000
 CC 76-3 (Electric Phenomena)
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 6004857	A	19991221	US 1998-154846	19980917
PRAI US 1998-154846		19980917		

AB A process for forming a crown-shaped storage node structure for a DRAM capacitor with a roughened top surface topol., needed for increased surface area, is described. The process features the use of a W silicide layer, used as a component of the storage node structure, with the W

silicide layer, subjected to subsequent procedures, providing the roughened top surface topol. for the storage node structure. The W silicide layer, after deposition, is subjected to oxidn., followed by removal of the formed oxide layer from the bottom portion of the unoxidized W silicide layer, resulting in the desired roughened top surface topol. of the bottom portion of the unoxidized W silicide.

ST DRAM capacitor manuf rough storage node plate; tungsten silicide oxidn
DRAM capacitor manuf

IT Memory devices
(DRAM (dynamic random access); fabrication of a DRAM capacitor having a rough storage node plate)

IT Vapor deposition process
(chem., low-pressure; in fabrication of a DRAM capacitor having a rough storage node plate)

IT Capacitors
Semiconductor device fabrication
(fabrication of a DRAM capacitor having a rough storage node plate)

IT Silicides
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(fabrication of a DRAM capacitor having a rough storage node plate contg.)

IT Oxides (inorganic), processes
RL: FMU (Formation, unclassified); REM (Removal or disposal);
FORM (Formation, nonpreparative); PROC (Process)
(formation and removal of; in DRAM capacitor to increase surface area)

IT Oxidation
(of tungsten silicide in DRAM capacitor to increase surface area)

IT Vapor deposition process
(plasma; in fabrication of a DRAM capacitor having a rough storage node plate)

IT 7664-39-3, Hydrogen fluoride, processes
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(etching by; in fabrication of a DRAM capacitor having a rough storage node plate)

IT 7631-86-9, Silica, processes 12033-89-5, Silicon nitride (Si₃N₄), processes 12627-41-7, Tungsten silicide 132614-63-2, Silicon nitride oxide (Si(N,O))
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(fabrication of a DRAM capacitor having a rough storage node plate contg.)

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

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- (2) Doan; US 5223081 1993 HCAPLUS
- (3) Fusake; US 5656529 1997 HCAPLUS
- (4) Gilchrist; US 5877063 1999 HCAPLUS
- (5) Hirao; US 5693557 1997 HCAPLUS
- (6) Jeng; US 5721154 1998 HCAPLUS
- (7) Kim; US 5721153 1998
- (8) Lee; US 5741734 1998
- (9) Lu; US 5110752 1992 HCAPLUS
- (10) Sekine; US 5622888 1997 HCAPLUS
- (11) Tsai; US 5763306 1998 HCAPLUS
- (12) Wang; US 5858838 1999
- (13) Watanabe; US 5723379 1998 HCAPLUS

(14) Zahurak; US 5760434 1998 HCAPLUS
 IT 7664-39-3, Hydrogen fluoride, processes
 RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (etching by; in fabrication of a DRAM capacitor having a rough storage node plate)
 RN 7664-39-3 HCAPLUS
 CN Hydrofluoric acid (8CI, 9CI) (CA INDEX NAME)

HF

IT 7631-86-9, Silica, processes
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (fabrication of a DRAM capacitor having a rough storage node plate contg.)
 RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L60 ANSWER 24 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 1999:669993 HCAPLUS
 DN 131:280251
 TI Processing a surface
 IN Rose, Peter H.; Sferlazzo, Piero
 PA Krytek Corp., USA
 SO U.S., 24 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 IC ICM H01L021-304
 ICS H01L021-306
 NCL 134007000
 CC 76-3 (Electric Phenomena)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	US 5967156	A	19991019	US 1994-335327	19941107
PRAI	US 1994-335327		19941107		

AB In 1 aspect, foreign material on the surface of a substrate, esp. a semiconductor wafer, is processed to form a reaction product by: providing a directed flow of a fluid, comprising a reactant, to the vicinity of the foreign material to be processed; and delivering an aerosol of at least partially frozen particles continuously or intermittently to the foreign material to help the reactant react with the foreign material to form the reaction product. In another aspect, foreign material is processed by: providing a directed flow of a fluid, comprising a reactant, to the foreign material to be processed in a limited area reaction region corresponding to a minor fraction of the total area of the substrate; agitating the foreign material in the reaction region to help the reactant react with the foreign material to form the reaction product; and providing relative motion between the substrate and the directed flow of

fluid to achieve a substantially uniform exposure of the foreign material to fluid flow and the agitation. IR or UV radiation may also be delivered to the foreign material. Specific methods for processing oxide layers, org. layers, and metal contamination are also described.

ST surface treatment semiconductor wafer; foreign material reaction substrate surface; aerosol reaction foreign material substrate surface; metal contamination removal substrate surface; IR assisted reaction foreign material substrate surface; UV assisted reaction foreign material substrate surface

IT Water vapor

(in processing of substrate surfaces)

IT Aerosols

IR radiation

UV radiation

(in reaction with foreign material on substrate surfaces)

IT Contamination (electronics)

(removal of metal contamination from substrate surfaces)

IT Metals, processes

RL: REM (Removal or disposal); PROC (Process)

(removal of metal contamination from substrate surfaces)

IT Semiconductor materials

(removal of oxide and org. layers and metal contamination from wafers of)

IT Organic compounds, processes

Oxides (inorganic), processes

RL: **REM (Removal or disposal)**; PROC (Process)

(removal of; from substrate surfaces)

IT 67-56-1, Methanol, processes 67-63-0, Isopropyl alcohol, processes

124-38-9, Carbon dioxide, processes 7440-37-1, Argon, processes

7664-39-3, Hydrogen fluoride, processes 7664-41-7, Ammonia,

processes 7727-37-9, Nitrogen, processes 7732-18-5, Water, processes

7782-50-5, Chlorine, processes

RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(in processing of substrate surfaces)

IT **7631-86-9**, Silica, processes

RL: REM (Removal or disposal); PROC (Process)

(removal of; from substrate surfaces)

RE.CNT 97 THERE ARE 97 CITED REFERENCES AVAILABLE FOR THIS RECORD

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IT 7664-39-3, Hydrogen fluoride, processes
 RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (in processing of substrate surfaces)
 RN 7664-39-3 HCAPLUS
 CN Hydrofluoric acid (8CI, 9CI) (CA INDEX NAME)

HF

IT 7631-86-9, Silica, processes
 RL: REM (Removal or disposal); PROC (Process)
 (removal of; from substrate surfaces)
 RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L60 ANSWER 25 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 1999:126748 HCAPLUS
 DN 130:156923
 TI Acidic bath with fluorometallate anions for forming a protective coating
 on zinc or galvanized surfaces
 IN Hall, James R.; Prescott, Thomas J.
 PA Henkel Corporation, USA
 SO U.S., 8 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 IC ICM C23C022-48

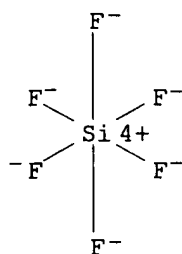
NCL 148247000

CC 56-6 (Nonferrous Metals and Alloys)

Section cross-reference(s): 42

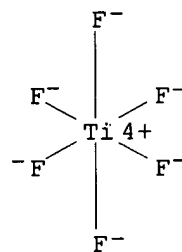
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5873952	A	19990223	US 1997-896238	19970717
PRAI	US 1997-896238		19970717		
AB	The Zn or Zn-alloy surface is coated in the aq. bath contg. transition metal cations, fluorometallate anions, and optionally acids for the pH of 2.5-5. The coating bath can be stabilized by monitoring the pH value and the concns. of transition metal cations and fluorometallate anions, and replenishing the low-concn. comps. to continue the treatment. The anion:cation ratio is preferably (0.5-10):1, with the cations at 0.0004-0.050M and the anions at 0.001-0.20M. The aq. bath for coating of galvanized steel as the coiled strip contains fluorotitanic acid for the anions at 1.90 g/L, NiCO ₃ for Ni cations at 0.54 g/L, and NH ₄ HCO ₃ for pH of 3.8, and is heated at 54-60.degree. and pumped for 8.0-s treatment of the coiled steel strip.				
ST	zinc surface coating aq nickel fluorotitanate bath; galvanized steel coating aq fluorotitanate bath				
IT	Group VIII element compounds RL: MOA (Modifier or additive use); USES (Uses) (aq. bath contg.; acidic bath with fluorometallate anions for coating of zinc or galvanized surfaces)				
IT	Galvanized steel RL: PEP (Physical, engineering or chemical process); PROC (Process) (coating of; acidic bath with fluorometallate anions for coating of zinc or galvanized surfaces)				
IT	Coating process (for zinc; acidic bath with fluorometallate anions for dip coating of zinc surface)				
IT	3333-67-3, Nickel carbonate 7440-50-8D, Copper, salts, uses 12021-95-3 16872-11-0, Fluoroboric acid 16961-83-4, Fluorosilicic acid 17439-11-1, Fluorotitanic acid RL: MOA (Modifier or additive use); USES (Uses) (aq. bath contg.; acidic bath with fluorometallate anions for coating of zinc or galvanized surfaces)				
IT	7440-66-6, Zinc, processes RL: PEP (Physical, engineering or chemical process); PROC (Process) (coating of; acidic bath with fluorometallate anions for coating of zinc or galvanized surfaces)				
IT	12597-69-2, Steel, processes RL: PEP (Physical, engineering or chemical process); PROC (Process) (galvanized strip, coating of; acidic bath with fluorometallate anions for coating of zinc or galvanized surfaces)				
RE.CNT	2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD				
RE					
	(1) Anon; WO 8505131 1985 HCAPLUS				
	(2) Deck; US 5344504 1994 HCAPLUS				
IT	16961-83-4, Fluorosilicic acid 17439-11-1, Fluorotitanic acid RL: MOA (Modifier or additive use); USES (Uses) (aq. bath contg.; acidic bath with fluorometallate anions for coating of zinc or galvanized surfaces)				
RN	16961-83-4 HCAPLUS				
CN	Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)				



2 H⁺

RN 17439-11-1 HCAPLUS
CN Titanate(2-), hexafluoro-, dihydrogen, (OC-6-11)- (9CI) (CA INDEX NAME)



2 H⁺

L60 ANSWER 26 OF 65 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:89619 HCAPLUS
DN 130:146782
TI Characterization of HF cleaning of ion-implanted Si surfaces
AU Kondoh, E.; Baklanov, M. R.; Maex, K.
CS IMEC, Louvain, B-3001, Belg.
SO Diffusion and Defect Data--Solid State Data, Pt. B: Solid State Phenomena (1999), 65-66(Ultra Clean Processing of Silicon Surfaces), 271-274
CODEN: DDBPE8; ISSN: 1012-0394
PB Scitec Publications
DT Journal
LA English
CC 76-2 (Electric Phenomena)
Section cross-reference(s): 66, 73
AB Issues of HF-last cleaning of implanted Si were studied by contact angle measurement and ellipsometry. Cleaning of BF₂-implanted Si is not straightforward because of slow **removal** of surface **oxide**. This is not significant for As-implanted Si. O chemisorption starts at the Si surface immediately after HF etching. Oxide grows faster on As-implanted Si than on non- or BF₂-implanted Si.
ST **silicon fluoroborane** implantation hydrofluoric acid cleaning; arsenic implantation silicon hydrofluoric acid

- cleaning; oxygen chemisorption silicon implantation etching
- IT Chemisorption
 Cleaning
 Contact angle
 Etching
 Ion implantation
 (oxide removal by and O chemisorption after HF
 etching of Si surfaces ion-implanted by BF2 and As studied by contact
 angle measurement and ellipsometry)
- IT Oxidation
 (surface; **oxide removal** by and O chemisorption
 after HF etching of Si surfaces ion-implanted by BF2 and As studied by
 contact angle measurement and ellipsometry)
- IT 7440-38-2, Arsenic, processes 7782-44-7, Oxygen, processes 13842-55-2,
 Boron difluoride
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (oxide removal by and O chemisorption after HF
 etching of Si surfaces ion-implanted by BF2 and As studied by contact
 angle measurement and ellipsometry)
- IT 7440-21-3, Silicon, properties
 RL: PEP (Physical, engineering or chemical process); PRP (Properties);
 PROC (Process)
 (oxide removal by and O chemisorption after HF
 etching of Si surfaces ion-implanted by BF2 and As studied by contact
 angle measurement and ellipsometry)
- IT 7631-86-9, Silica, processes
 RL: PEP (Physical, engineering or chemical process); **REM (Removal or
 disposal)**; PROC (Process)
 (oxide removal by and O chemisorption after HF
 etching of Si surfaces ion-implanted by BF2 and As studied by contact
 angle measurement and ellipsometry)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Baklanov, M; Surf Sci 1979, V88, P427ff
- (2) Bootsma, G; Surf Sci 1969, V14, P52ff
- (3) Dorn, R; Surf Sci 1974, V42, P583ff
- (4) Morita, M; J Appl Phys 1990, V68, P1272ff
- (5) Ponjee, J; J Vac Sci Technol 1990, VB8, P463ff
- (6) Sato, Y; Jap J Appl Phy 1994, V33, P6508ff

L60 ANSWER 27 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 1998:778444 HCAPLUS

DN 130:131003

TI Fiber Optic Corrosion Sensor fabricated by electrochemical method

AU Li, X. M.; Chen, W. M.; Huang, Z. Q.; Huang, S. L.; Bennett, K. D.

CS Center for Intelligent Structures, Chongqing University, 400044, Peop.
 Rep. China

SO Proceedings of SPIE-The International Society for Optical Engineering
 (1998), 3330(Sensory Phenomena and Measurement Instrumentation for Smart
 Structures and Materials), 126-133

CODEN: PSISDG; ISSN: 0277-786X

PB SPIE-The International Society for Optical Engineering

DT Journal

LA English

CC 72-8 (Electrochemistry)

Section cross-reference(s): 55

AB This paper reports the research of a Fiber Optic Corrosion Sensor (FOCS)
 fabricated by electroplating an Fe-C alloy film onto an optical fiber core

within the sensing region. Fabrication of the sensing **film** involves **removal** of the cladding, **metalization** of the optical fiber core, and electroplating of the Fe-C alloy layer. The initial results show that the sensor output power increases by about 35% when the film is corroded with the sensor of the film passivated, and that the time taken to rise to max. output power is prolonged by almost 3 times, compared with that for non-passivated film. These results demonstrate the feasibility of using optical fiber corrosion sensors for monitoring corrosion of steel in civil structures.

- ST fiber optic corrosion sensor fabrication electrochem method;
electroplating iron carbon alloy steel corrosion sensor
- IT Corrosion
Fiber optics
Sensors
(fiber optic corrosion sensor fabricated by electrochem. method)
- IT X-ray diffraction
(of Fe-C alloy electrodeposited from bath contg. org. acid on silver electrode)
- IT Electrodeposition
(of Fe-C alloy layer on fiber optic in fabrication of fiber optic corrosion sensor)
- IT Thickness
(of electroplating Fe-C layer, dependence on electroplating time)
- IT Passivation
(of optical fiber in soln. of HNO3 in fabrication of fiber optic corrosion sensor)
- IT **Etching**
(of silica **layer** on fiber optic in fabrication of fiber optic corrosion sensor)
- IT Coating process
(of silver on fiber optic in fabrication of fiber optic corrosion sensor)
- IT 50-81-7, L-Ascorbic acid, uses 77-92-9, Citric acid, uses
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(electrodeposition of Fe-C alloy on fiber optic from soln. contg.)
- IT 7720-78-7
RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(electrodeposition of Fe-C alloy on fiber optic from soln. contg.)
- IT 12716-37-9
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); FORM (Formation, nonpreparative); PROC (Process)
(electrodeposition on fiber optic from soln. contg. org. acid in fabrication of fiber optic corrosion sensor)
- IT 1336-21-6, Ammonium hydroxide
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(**metalization** of fiber optic after **removing** of silica cladding by silver in soln. contg.)
- IT 7761-88-8, Silver nitrate, properties
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(**metalization** of fiber optic after **removing** of silica cladding by tin in soln. of)
- IT 7697-37-2, Nitric acid, uses
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(passivation of fiber optic after **removing** of silica cladding in soln. of)
- IT 7631-86-9, Silica, properties 7664-39-3, Hydrofluoric

acid, properties

RL: PEP (Physical, engineering or chemical process); PRP (Properties);

RCT (Reactant); PROC (Process); RACT (Reactant or reagent)

(**removing** of silica cladding from optical fiber by HF in
fabrication of fiber optic corrosion sensor)

IT 7647-01-0, Hydrochloric acid, uses

RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)

(sensation of fiber optic after **removing** of silica cladding
by tin in soln. contg.)

IT 7772-99-8, Tin dichloride, properties

RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)

(sensation of fiber optic after **removing** of silica cladding
by tin in soln. of)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Bennett, K; SPIE 1995, V2446, P71

(2) Fontana, M; Corrosion Engineering 1986, P1

(3) Fuhr, P; SPIE 1995, V2446, P2

(4) Fuhr, P; SPIE 1996, V2719, P229 HCAPLUS

(5) Oxtoby, D; CHEMISTRY: SCIENCE OF CHANGE 1990, P564

(6) Rutherford, P; SPIE 1996, V2718, P158 HCAPLUS

IT **7631-86-9**, Silica, properties **7664-39-3**, Hydrofluoric
acid, properties

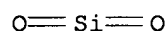
RL: PEP (Physical, engineering or chemical process); PRP (Properties);

RCT (Reactant); PROC (Process); RACT (Reactant or reagent)

(**removing** of silica cladding from optical fiber by HF in
fabrication of fiber optic corrosion sensor)

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 7664-39-3 HCAPLUS

CN Hydrofluoric acid (8CI, 9CI) (CA INDEX NAME)

HF

L60 ANSWER 28 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 1998:410768 HCAPLUS

DN 129:75171

TI Dry-etching gas for oxide film, its etching method, and method of cleaning
silicon

IN Saito, Hiroshi

PA Central Glass Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM H01L021-3065

ICS C23C016-00; C23F004-00; H01L021-304

CC 76-3 (Electric Phenomena)

FAN.CNT 1

PATENT NO.

KIND DATE

APPLICATION NO. DATE

PI	JP 10172957	A2	19980626	JP 1996-328847	19961209
	JP 2950785	B2	19990920		
PRAI	JP 1996-328847		19961209		

AB An etching gas, a mixt. of (1) a HF gas and (2) a gas which is excited and becomes plasma (a plasma gas), is claimed. The plasma gas may be Ar, He, Kr, Xe, or H. Cleaning of Si is carried out by (a) stopping supply of the HF gas after the dry-etching, and (b) leading only the plasma gas onto the Si substrate. Oxide film is completely removed without damaging Si substrate.

ST plasma gas dry etching oxide film; silicon cleaning dry etching plasma gas; hydrogen fluoride dry etching gas

IT **Oxides (inorganic)**, processes
 RL: **REM (Removal or disposal)**; PROC (Process)
 (dry-etching gas contg. HF and plasma gas for oxide film)

IT Cleaning
 (of silicon; dry-etching gas contg. HF and plasma gas for oxide film)

IT Etching
 (plasma; dry-etching gas contg. HF and plasma gas for oxide film)

IT **7664-39-3**, Hydrogen fluoride, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (dry-etching gas contg. HF and plasma gas for oxide film)

IT **7631-86-9**, Silicon oxide, processes 59763-75-6, Tantalum oxide
 82867-87-6, Silicon fluoride oxide (SiFO)
 RL: REM (Removal or disposal); PROC (Process)
 (dry-etching gas contg. HF and plasma gas for oxide film)

IT 7440-21-3, Silicon, processes
 RL: PEP (Physical, engineering or chemical process); REM (Removal or disposal); PROC (Process)
 (dry-etching gas contg. HF and plasma gas for oxide film and cleaning of silicon)

IT 1333-74-0, Hydrogen, uses 7439-90-9, Krypton, uses 7440-37-1, Argon, uses 7440-59-7, Helium, uses 7440-63-3, Xenon, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (plasma gas; dry-etching gas contg. HF and plasma gas for oxide film)

IT **7664-39-3**, Hydrogen fluoride, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (dry-etching gas contg. HF and plasma gas for oxide film)

RN 7664-39-3 HCAPLUS

CN Hydrofluoric acid (8CI, 9CI) (CA INDEX NAME)

HF

IT **7631-86-9**, Silicon oxide, processes
 RL: REM (Removal or disposal); PROC (Process)
 (dry-etching gas contg. HF and plasma gas for oxide film)

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L60 ANSWER 29 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 1998:353198 HCAPLUS

KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

DN 128:310787
 TI Recovery of lead from acid battery manufacture waste.
 IN Teodorescu, Romanita; Radulescu, Carmen-Elena; Ioanide, Dumitru-Iordan;
 Serpescu, Viorel; Simedrea, Florin; Cernea, Petra
 PA Institutul de Metale Neferoase si Rare, Bucuresti, Rom.
 SO Rom., 3 pp.
 CODEN: RUXXA3
 DT Patent
 LA Romanian
 IC ICM C22B003-06
 ICS C25C001-18
 CC 54-2 (Extractive **Metallurgy**)
 Section cross-reference(s): 52

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	RO 105712	B1	19921130	RO 1990-144727	19900405
PRAI	RO 1990-144727		19900405		
AB	Solid wastes contg. lead oxides , from acid battery manuf., are dissolved in fluorosilicic or fluoroboric acids, the soln. is treated with sulfuric acid and hydrogen peroxide. The resulting lead sulfide is leached with sodium bicarbonate and the resulting carbonate is dissolved in fluorosilicic or fluoroboric acids (130-150 g/L). The soln. is subjected to electrolysis with sodium linosulfonate (0.4-4.0 g/L), bone glue (0.04-0.4 g/L), and phosphorus (1.5-2.5 g/L) additives. The overall recovery of lead is 90-97%. The advantages are related to environment pollution prevention by using a hydrometallurgical method instead of pyrometallurgical process as well as material savings resulting from the use of waste hexafluorosilicic acid from fertilizer manuf.				
ST	lead recycling acid battery manuf				
IT	Glues Glues (bone glues; lead recycling from acid battery manuf. waste by dissoln. in fluorine-contg. acids, sulfatization, carbonate formation, redissoln. and electrolysis with additives)				
IT	Bone Bone (glues; lead recycling from acid battery manuf. waste by dissoln. in fluorine-contg. acids, sulfatization, carbonate formation, redissoln. and electrolysis with additives)				
IT	Electrolysis Secondary batteries Solid wastes (lead recycling from acid battery manuf. waste by dissoln. in fluorine-contg. acids, sulfatization, carbonate formation, redissoln. and electrolysis with additives)				
IT	Recycling (nonferrous metal ; lead recycling from acid battery manuf. waste by dissoln. in fluorine-contg. acids, sulfatization, carbonate formation, redissoln. and electrolysis with additives)				
IT	7723-14-0, Phosphorus, uses 8061-51-6, Sodium linosulfonate RL: MOA (Modifier or additive use); USES (Uses) (lead recycling from acid battery manuf. waste by dissoln. in fluorine-contg. acids, sulfatization, carbonate formation, redissoln. and electrolysis with additives)				
IT	144-55-8, Sodium bicarbonate, processes 1335-25-7, Lead oxide 7664-93-9, Sulfuric acid, processes 7722-84-1, Hydrogen peroxide, processes 16872-11-0, Fluoroboric acid 16961-83-4 ,				

Hexafluorosilicic acid

RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (lead recycling from acid battery manuf. waste by dissoln. in
 fluorine-contg. acids, sulfatization, carbonate formation, redissoln.
 and electrolysis with additives)

IT 598-63-0P, Lead carbonate

RL: PNU (Preparation, unclassified); PREP (Preparation)
 (lead recycling from acid battery manuf. waste by dissoln. in
 fluorine-contg. acids, sulfatization, carbonate formation, redissoln.
 and electrolysis with additives)

IT 7439-92-1P, Lead, preparation

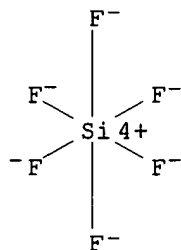
RL: PUR (Purification or recovery); PREP (Preparation)
 (lead recycling from acid battery manuf. waste by dissoln. in
 fluorine-contg. acids, sulfatization, carbonate formation, redissoln.
 and electrolysis with additives)

IT 16961-83-4, Hexafluorosilicic acid

RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (lead recycling from acid battery manuf. waste by dissoln. in
 fluorine-contg. acids, sulfatization, carbonate formation, redissoln.
 and electrolysis with additives)

RN 16961-83-4 HCAPLUS

CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



●2 H⁺

L60 ANSWER 30 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 1997:231009 HCAPLUS

DN 126:219533

TI Semiconductor device fabrication

IN Green, Martin Laurence; Ma, Yi

PA At&t Corp., USA

SO Eur. Pat. Appl., 10 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM H01L021-306

CC 76-3 (Electric Phenomena)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 758796	A1	19970219	EP 1996-305795	19960807
	R: DE, FR, GB				
	US 5814562	A	19980929	US 1995-558997	19951116

JP 09106971 A2 19970422 JP 1996-214467 19960814
 PRAI US 1995-2275P P 19950814
 US 1995-558997 A 19951116

- AB The invention includes a process for cleaning a Si substrate before gate SiO₂ is formed on it. The gate SiO₂ is used to form transistor gates. The process provides a Si/SiO₂ interface and the bulk SiO₂ with advantageous elec. properties. The Si substrate is 1st subjected to a stream of HF vapor. The HF vapor stream is a mixt. of anhyd. HF, MeOH, and N. Following this, the substrate is subjected to gaseous Cl that has been irradiated with broad-band UV radiation. After the substrate has been cleaned, a layer of SiO₂ is grown on it using conventional techniques such as rapid thermal oxidn. It is advantageous if the cleaned Si surface is kept under high vacuum or in an inert gas environment before the oxide growth is commenced. It is advantageous if the substrate is maintained in an essentially O-free atm. from the time the HF vapor step is started until the growth of SiO₂ is commenced. After the oxide is grown, device structures are formed on the Si substrate using conventional processing techniques.
- ST semiconductor device manuf; silicon substrate cleaning
- IT MOS devices
 (cleaning of silicon substrates in fabrication of)
- IT Transistors
 (cleaning of silicon substrates in fabrication of semiconductor devices contg.)
- IT UV radiation
 (cleaning of silicon substrates in fabrication of semiconductor devices using chlorine treated with)
- IT Cleaning
 (of silicon substrates in fabrication of semiconductor devices)
- IT **Oxides (inorganic)**, processes
 RL: REM (Removal or disposal); PROC (Process)
 (removal of native **oxides** from silicon substrates in fabrication of semiconductor devices)
- IT Semiconductor devices
 (silicon substrate cleaning in fabrication of)
- IT 7782-50-5, Chlorine, processes
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (UV-irradiated; in cleaning of silicon substrates in fabrication of semiconductor devices)
- IT **7631-86-9**, Silica, processes
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (cleaning of silicon substrates in fabrication of semiconductor devices contg.)
- IT 7440-21-3, Silicon, processes
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (cleaning of substrates of)
- IT 67-56-1, Methanol, processes **7664-39-3**, Hydrogen fluoride, processes 7727-37-9, Nitrogen, processes
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (in cleaning of silicon substrates in fabrication of semiconductor devices)
- IT **7631-86-9**, Silica, processes
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (cleaning of silicon substrates in fabrication of semiconductor devices contg.)

RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

IT 7664-39-3, Hydrogen fluoride, processes
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (in cleaning of silicon substrates in fabrication of semiconductor
 devices)
 RN 7664-39-3 HCAPLUS
 CN Hydrofluoric acid (8CI, 9CI) (CA INDEX NAME)

HF

L60 ANSWER 31 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 1996:660798 HCAPLUS
 DN 125:282565
 TI Rough surface etching solutions for pretreatment in platinum plating of
 titanium or its alloys and etching method
 IN Kimura, Takayuki
 PA Tanaka Precious Metal Ind, Japan
 SO Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C23F001-26
 ICS C25D003-50; C25D005-38
 CC 56-6 (Nonferrous Metals and Alloys)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08218185	A2	19960827	JP 1995-46256	19950210
PRAI	JP 1995-46256		19950210		
AB	The etching solns. contain HI and/or I2 as I sources and HF, NaF, KF, NH4F, NH4HF2, H2SiF6 , HBF4, and/or alkali metal salts or ammonium salts of H2SiF6 or HBF4 as F sources. The solns. may contain KI or NaI. The process comprises removing oxide layers from Ti or its alloy surfaces, etching with the solns., and optionally activation with aq. NH4HF solns. Resulting products have dense platings with high adhesion.				
ST	etching soln titanium alloy iodine fluoride; platinum plating titanium alloy etching				
IT	Coating process Etching (etching solns. contg. iodine and fluoride in platinum plating of titanium or its alloys and etching method)				
IT	7440-06-4, Platinum, uses 7440-32-6, Titanium, uses RL: NUU (Other use, unclassified); USES (Uses) (etching solns. contg. iodine and fluoride in platinum plating of titanium or its alloys and etching method)				
IT	1341-49-7, Ammonium hydrogen fluoride 7553-56-2, Iodine, uses 7664-39-3, Hydrogen fluoride, uses 7681-11-0, Potassium iodide, uses 7681-49-4, Sodium fluoride, uses 7681-82-5, Sodium iodide, uses				

7789-23-3, Potassium fluoride 10034-85-2, Hydrogen iodide 12125-01-8,
Ammonium fluoride 16872-11-0, Borofluoric acid **16961-83-4**,
Hexafluorosilicic acid

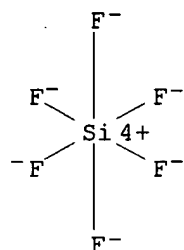
RL: TEM (Technical or engineered material use); USES (Uses)
(etching solns. contg. iodine and fluoride in platinum plating of
titanium or its alloys and etching method)

IT **16961-83-4**, Hexafluorosilicic acid

RL: TEM (Technical or engineered material use); USES (Uses)
(etching solns. contg. iodine and fluoride in platinum plating of
titanium or its alloys and etching method)

RN 16961-83-4 HCAPLUS

CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



2 H⁺

L60 ANSWER 32 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 1996:554569 HCAPLUS

DN 125:174999

TI Etching solution for pretreatment of platinum plating on titanium
substrate and etching method

IN Kimura, Takayuki

PA Tanaka Precious Metal Ind, Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C23F001-26

ICS C25D003-50; C25D005-38

CC 56-6 (**Nonferrous Metals** and Alloys)

Section cross-reference(s): 72

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08176852	A2	19960709	JP 1994-336124	19941224
PRAI	JP 1994-336124		19941224		
AB	The etching soln. contains 4-12N HNO ₃ , 2-24N H ₂ SO ₄ , or 4-12N HCl with 0.05-0.5% fluorides. The fluoride may be HF, NaF, KF, NH ₄ F, NH ₄ HF ₂ , etc. The method involves removing surface oxide on Ti (alloy) substrate and etched with the soln. to form uniform surface for Pt plating.				
ST	platinum plating pretreatment etching titanium; fluoride etchant titanium plating pretreatment				
IT	Electrodeposition and Electroplating				

Etching

(etching soln. contg. fluoride for pretreatment of Pt plating on Ti
substrate)

IT Titanium alloy, base

RL: PEP (Physical, engineering or chemical process); PROC (Process)
(etching soln. contg. fluoride for pretreatment of Pt plating on Ti
substrate)

IT 7697-37-2, Nitric acid, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(etchant; etching soln. contg. fluoride for pretreatment of Pt plating
on Ti substrate)

IT 1341-49-7, Ammonium hydrogen fluoride 7664-39-3, Hydrogen fluoride, uses

7681-49-4, Sodium fluoride, uses 7789-23-3, Potassium fluoride

12125-01-8, Ammonium fluoride 16872-11-0, Tetrafluoroboric acid

16961-83-4, Hexafluorosilicic acid

RL: MOA (Modifier or additive use); TEM (Technical or engineered material
use); USES (Uses)

(etching soln. contg. fluoride for pretreatment of Pt plating on Ti
substrate)

IT 7440-06-4, Platinum, miscellaneous

RL: MSC (Miscellaneous)
(etching soln. contg. fluoride for pretreatment of Pt plating on Ti
substrate)

IT 7440-32-6, Titanium, processes

RL: PEP (Physical, engineering or chemical process); PROC (Process)
(etching soln. contg. fluoride for pretreatment of Pt plating on Ti
substrate)

IT 7647-01-0, Hydrochloric acid, uses 7664-93-9, Sulfuric acid, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(etching soln. contg. fluoride for pretreatment of Pt plating on Ti
substrate)

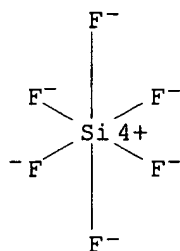
IT 16961-83-4, Hexafluorosilicic acid

RL: MOA (Modifier or additive use); TEM (Technical or engineered material
use); USES (Uses)

(etching soln. contg. fluoride for pretreatment of Pt plating on Ti
substrate)

RN 16961-83-4 HCAPLUS

CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



2 H⁺

DN 125:209625
 TI New approach to preparing smooth Si(100) surfaces: Characterization by spectroellipsometry and validation of Si/SiO₂ interfaces properties in **metal-oxide-semiconductor** devices
 AU Schmidt, D.; Niimi, H.; Hinds, B. J.; Aspnes, D. E.; Lucovsky, G.
 CS Department Physics, North Carolina State University, Raleigh, NC, 27695-8202, USA
 SO Journal of Vacuum Science & Technology, B: Microelectronics and Nanometer Structures (1996), 14(4), 2812-2816
 CODEN: JVTBD9; ISSN: 0734-211X
 PB American Institute of Physics
 DT Journal
 LA English
 CC 76-3 (Electric Phenomena)
 Section cross-reference(s): 66
 AB Wet chem. removal of thermally grown SiO₂ layers on Si(100) **substrates** was studied as a function of the pH of the etching solns. at -0.32 to +1.6 by adding controlled amts. of H₂SO₄ to a 1:30 HF:H₂O mixt. Characterization of the stripped Si(100) surfaces by spectroellipsometry showed that the smoothest surfaces were obtained at a 1:0.50:30 HF (49%):H₂SO₄ (98%):H₂O etch with a pH .apprx.0.5. Elec. characterization of **metal-oxide-semiconductor** (MOS) capacitors fabricated on these surfaces with oxide layers prepd. by remote plasma enhanced CVD showed (i) the lowest d. of interface traps, Dit, (ii) the lowest tunneling currents, J₀, and (iii) the highest breakdown fields, EBD, occurring at the same pH value that produced the smoothest surfaces. In contrast, MOS capacitors fabricated with high-temp. thermally grown oxides were not significantly affected.
 ST **etching** silica **layer** silicon sulfuric acid; hydrogen fluoride sulfuric acid etching silica; capacitor silicon silica etching surface smoothness
 IT Dielectric strength
 Electric capacitors
 Etching
 Kinetics of etching
 (effect of pH of HF-H₂SO₄ etching soln. on surface smoothness of silicon and properties of MOS capacitors based on these **substrates**)
 IT Trapping and Traps
 (interfacial, effect of pH of HF-H₂SO₄ etching soln. on surface smoothness of silicon and properties of MOS capacitors based on these **substrates**)
 IT Vapor deposition processes
 (plasma, of silica for capacitors; effect of pH of HF-H₂SO₄ etching soln. on surface smoothness of silicon and properties of MOS capacitors based on these **substrates**)
 IT Surface structure
 (roughness, effect of pH of HF-H₂SO₄ etching soln. on surface smoothness of silicon and properties of MOS capacitors based on these **substrates**)
 IT Electric current
 (tunnel, effect of pH of HF-H₂SO₄ etching soln. on surface smoothness of silicon and properties of MOS capacitors based on these **substrates**)
 IT 7647-01-0, Hydrogen chloride, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (effect of hydrogen fluoride etching of silica with)
 IT 7440-21-3, Silicon, properties

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
 (effect of pH of HF-H₂SO₄ etching soln. on surface smoothness of silicon and properties of MOS capacitors based on these substrates)

IT 7631-86-9, Silica, properties

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); **RCT (Reactant)**; **REM (Removal or disposal)**; PROC (Process); RACT (Reactant or reagent); USES (Uses)
 (effect of pH of HF-H₂SO₄ etching soln. on surface smoothness of silicon and properties of MOS capacitors based on these substrates)

IT 7664-39-3, Hydrogen fluoride, uses 7664-93-9, Sulfuric acid, uses

RL: NUU (Other use, unclassified); **RCT (Reactant)**; RACT (Reactant or reagent); USES (Uses)
 (effect of pH of HF-H₂SO₄ etching soln. on surface smoothness of silicon and properties of MOS capacitors based on these substrates)

IT 7631-86-9, Silica, properties

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); **RCT (Reactant)**; **REM (Removal or disposal)**; PROC (Process); RACT (Reactant or reagent); USES (Uses)
 (effect of pH of HF-H₂SO₄ etching soln. on surface smoothness of silicon and properties of MOS capacitors based on these substrates)

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

IT 7664-39-3, Hydrogen fluoride, uses

RL: NUU (Other use, unclassified); **RCT (Reactant)**; RACT (Reactant or reagent); USES (Uses)
 (effect of pH of HF-H₂SO₄ etching soln. on surface smoothness of silicon and properties of MOS capacitors based on these substrates)

RN 7664-39-3 HCAPLUS

CN Hydrofluoric acid (8CI, 9CI) (CA INDEX NAME)

HF

L60 ANSWER 34 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 1995:773048 HCAPLUS

DN 123:289000

TI Washing process of plastic bumpers for coating process

IN Ikeda, Satoru; Yamane, Yoshiki; Watanabe, Kentaro; Nakamura, Itaru

PA Nippon Paint Co Ltd, Japan; Nissan Motor

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C11D010-02

ICS C08J007-02; C11D017-00

ICI C11D010-02, C11D007-08, C11D007-28, C11D001-66, C11D007-24, C11D007-06

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 42

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 07126697	A2	19950516	JP 1993-273799	19931101
PRAI	JP 1993-273799		19931101		
AB	Title process includes (1) pre-washing by hot water at temp. higher than the m.p., i.e., .gtoreq.90.degree., of paraffin wax exterior mold-releasing agents as contents in the bumpers, (2) washing by acidic aq. detergents with pH 2-4 contg. 0.1-100 g/L mineral acids, 0.01-10 g/L fluorinated compds., 0.1-10 g/L nonionic surfactants (S) with HLB 13-17, polyethylene-polypropylene-based foaming inhibitors at wt. ratio 0.1-2 vs. S, and Na and/or ammonium pH controllers, (3) washing with water, (4) blowing air, and (5) drying at room temp. to 80.degree.. Thus, a polyurethane bumper contg. Zn stearate and Rimurikei B 421 (paraffin wax) was successively washed with water, with a detergent contg. 3 g/L H2SO4, 0.5 g/L HF, 1 g/L poly(oxyethylene) nonylphenyl ether, 0.5 g/L ethylene oxide-propylene oxide block copolymer higher alc. ether, 1.3 g/L 30% aq. ammonia, and NaOH, and with water, blown with air, and dried at 75.degree. for 7 min. The bumper was precoated with a primer, coated with a polyurethane, and baked to give a test piece showing improved adhesion.				
ST	plastic bumper washing process; coating plastic bumper surface cleaning ; mold releaser removal plastic bumper; hot water washing plastic bumper; mineral acid detergent plastic bumper; nonionic surfactant detergent plastic bumper; polyoxyethylene polyoxypropylene deriv antifoaming agent; acidic detergent plastic bumper; paraffin exterior mold releaser bumper; zinc stearate inner mold releaser				
IT	Detergents (aq. detergents contg. mineral acids and surfactants and antifoaming agents for washing plastic bumpers before coating process)				
IT	Urethane polymers, uses RL: DEV (Device component use); USES (Uses) (bumpers; washing of plastic bumpers contg. paraffin mold releaser before coating process)				
IT	Paraffin waxes and Hydrocarbon waxes, processes RL: REM (Removal or disposal) ; PROC (Process) (mold-releasing agents, Rimurikei B 421; washing of plastic bumpers with hot water contg. paraffin mold releaser before coating process)				
IT	Coating process Parting materials (washing of plastic bumpers with hot water contg. paraffin mold releaser before coating process)				
IT	Automobiles (bumpers, washing of plastic bumpers contg. paraffin mold releaser before coating process)				
IT	7664-39-3, Hydrofluoric acid, uses 7664-93-9, Sulfuric acid, uses 16961-83-4 , Hydrofluorosilicic acid RL: TEM (Technical or engineered material use); USES (Uses) (aq. detergents contg. mineral acids and surfactants and antifoaming agents for washing plastic bumpers before coating process)				
IT	9002-92-0, Poly(oxyethylene) lauryl ether RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses) (surfactants; aq. detergents contg. mineral acids and surfactants and antifoaming agents for washing plastic bumpers before coating process)				

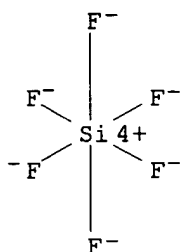
IT 9016-45-9, Poly(oxyethylene) nonylphenyl ether 106392-12-5D, Ethylene oxide-propylene oxide block copolymer, higher alc. ethers
 RL: TEM (Technical or engineered material use); USES (Uses)
 (surfactants; aq. detergents contg. mineral acids and surfactants and antifoaming agents for washing plastic bumpers before coating process)

IT 7732-18-5, Water, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (washing of plastic bumpers with hot water contg. paraffin mold releaser before coating process)

IT 16961-83-4, Hydrofluorosilicic acid
 RL: TEM (Technical or engineered material use); USES (Uses)
 (aq. detergents contg. mineral acids and surfactants and antifoaming agents for washing plastic bumpers before coating process)

RN 16961-83-4 HCAPLUS

CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



●2 H⁺

L60 ANSWER 35 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 1995:227364 HCAPLUS
 DN 123:206196
 TI Treating **metals** with fluoroacid-**metal** oxide aqueous composition for corrosion resistance
 IN Dolan, Shawn E.; Reghi, Gary A.
 PA Henkel Corp., USA
 SO U.S., 12 pp. Cont.-in-part of U.S. 5,281,282.
 CODEN: USXXAM
 DT Patent
 LA English
 IC ICM C23C022-48
 NCL 148247000
 CC 56-6 (Nonferrous **Metals** and Alloys)
 Section cross-reference(s): 55

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5356490	A	19941018	US 1993-131645	19931005
	US 5281282	A	19940125	US 1992-862012	19920401
	ZA 9302181	A	19931028	ZA 1993-2181	19930326
	AT 154833	E	19970715	AT 1993-907635	19930326
	ES 2106330	T3	19971101	ES 1993-907635	19930326
	RU 2125118	C1	19990120	RU 1994-42462	19930326
	IN 180012	A	19980110	IN 1993-MA220	19930329

CN 1078271	A	19931110	CN 1993-105207	19930401
CN 1034683	B	19970423		
ZA 9407354	A	19950510	ZA 1994-7354	19940921
CA 2172632	AA	19950413	CA 1994-2172632	19940928
WO 9509934	A1	19950413	WO 1994-US10587	19940928
W: AU, BR, CA, CN, JP, KR, NO, NZ, RU				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9479567	A1	19950501	AU 1994-79567	19940928
AU 676950	B2	19970327		
EP 728225	A1	19960828	EP 1994-930451	19940928
EP 728225	B1	19991229		
R: DE, FR, GB, IT, NL, SE				
CN 1132531	A	19961002	CN 1994-193659	19940928
CN 1059936	B	20001227		
BR 9407751	A	19970212	BR 1994-7751	19940928
US 5534082	A	19960709	US 1995-429431	19950421
US 5769967	A	19980623	US 1996-674558	19960702
CN 1151449	A	19970611	CN 1996-109425	19960809
CN 1067447	B	20010620		
PRAI US 1992-862012	A2	19920401		
US 1993-131645	A	19931005		
US 1994-213138	B1	19940315		
WO 1994-US10587	W	19940928		
US 1995-429431	A1	19950421		
AB	A precursor contg. a) .gtoreq.1 of H2TiF6, H2ZrF6, H2HfF6, H2SiF6, H2GeF6, H2SnF6, and HBF4; and b) dissolved and/or dispersed carbonates, oxides , and hydroxides of .gtoreq.1 of Ti, Zr, Al, Hf, Si, Ge, Sn, and B is maintained at sufficient temp. and time to obtain a clear soln. The compn. is then mixed with H2O-sol. or dispersible polymer and/or a H2O-sol. oxide, hydroxide, and carbonate of .gtoreq.1 of Ti, Zr, Hf, B, Al, Si, Ge, and Sn to form a soln that is stable for .gtoreq.100 h at 20-25.degree.. The compn. can be dried on the surface, or treated, rinsed, and subsequently coated with polymers and/or chromates. Increased corrosion resistance of metals treated with the compn., esp. after subsequent painting is obtained.			
ST	fluoroacid metal oxide compn corrosion resistance			
IT	Coating process			
	Corrosion inhibitors			
	(treating metals with stable fluoroacid- metal oxide aq. compn. for corrosion resistance)			
IT	Acrylic polymers, uses			
	Epoxy resins, uses			
	RL: TEM (Technical or engineered material use); USES (Uses)			
	(treating metals with stable fluoroacid- metal oxide aq. compn. for corrosion resistance)			
IT	7631-86-9, Fumed silica, uses			
	RL: TEM (Technical or engineered material use); USES (Uses)			
	(colloidal; treating metals with stable fluoroacid- metal oxide aq. compn. for corrosion resistance)			
IT	7429-90-5D, Aluminum, compds. 7440-21-3D, Silicon, compds. 7440-31-5D, Tin, compds. 7440-32-6D, Titanium, compds. 7440-42-8D, Boron, compds. 7440-56-4D, Germanium, compds. 7440-58-6D, Hafnium, compds. 7440-67-7D, Zirconium, compds.			
	RL: TEM (Technical or engineered material use); USES (Uses)			
	(hydroxides, oxides, and carbonates; treating metals with stable fluoroacid- metal oxide aq. compn. for corrosion resistance)			
IT	1333-82-0, Chromium oxide (CrO3) 9005-25-8, Corn starch, uses			

12021-47-5 12021-95-3 14475-63-9, Zirconium hydroxide 16872-11-0,
Tetrafluoroboric acid **16950-43-9 16961-83-4**,
Fluosilicic acid **17439-11-1** 36577-48-7D, Zirconium carbonate,
basic 44488-49-5 147335-59-9, Parcolene 95AT 162006-87-3
162730-95-2, Accumer 1510 162730-99-6, Parcolene 88B 162731-54-6, RIX
95928

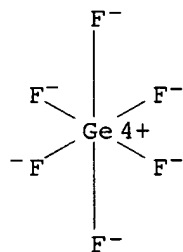
RL: TEM (Technical or engineered material use); USES (Uses)
(treating **metals** with stable fluoroacid-**metal** oxide
aq. compn. for corrosion resistance)

IT **16950-43-9 16961-83-4**, Fluosilicic acid
17439-11-1

RL: TEM (Technical or engineered material use); USES (Uses)
(treating **metals** with stable fluoroacid-**metal** oxide
aq. compn. for corrosion resistance)

RN 16950-43-9 HCAPLUS

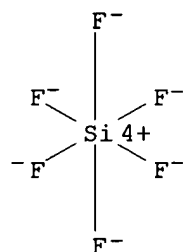
CN Germanate(2-), hexafluoro-, dihydrogen, (OC-6-11)- (9CI) (CA INDEX NAME)



2 H⁺

RN 16961-83-4 HCAPLUS

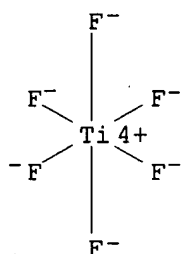
CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



2 H⁺

RN 17439-11-1 HCAPLUS

CN Titanate(2-), hexafluoro-, dihydrogen, (OC-6-11)- (9CI) (CA INDEX NAME)

●2 H⁺

L60 ANSWER 36 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 1994:489383 HCAPLUS

DN 121:89383

TI Formation of hydrophilic and corrosion-resistant coating agent for aluminum foils and heat exchangers

IN Chen, Xujun; Chen, Zhenjia; Li, Yui

PA Beijing Chemical College, Peop. Rep. China

SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 9 pp.

CODEN: CNXXEV

DT Patent

LA Chinese

IC ICM C23C022-66

ICS F28F013-18

CC 56-6 (Nonferrous Metals and Alloys)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CN 1079998	A	19931229	CN 1993-107761	19930702
	CN 1026902	B	19941207		
PRAI	CN 1993-107761		19930702		

AB The title coating agent contains amine salts 0.06-50, halogen compds. 0.2-75, azole and its derivs. 0.005-1, polymeric phosphates 0.4-55, alk. compds. 10-200, and defoaming agents and solubilizers 0.01-5 g/L. The coating agent is prepd. by: dissolving the alk. compds. and the polymeric phosphates into water, heating to 50-90.degree., adding azole, its derivs., and the solubilizers, stirring, adding the amine salts and the defoaming agents, stirring again, and removing the insol. impurities. The **coating** is formed by: **cleaning** Al foils and Al heat exchangers, degreasing, immersing into the coating agent at 20-90 .degree.C, washing with water, and drying at 140-280.degree. for 1-15 min.

ST coating agent hydrophilic corrosion resistance; aluminum foil coating agent; heat exchanger aluminum coating agent; amine salt coating agent; halogen compd coating agent; azole polymeric phosphate coating agent; alk compd coating agent

IT Heat-exchange apparatus

(aluminum, hydrophic and corrosion-resistant coating agent for)

IT Amines, uses

RL: USES (Uses)

(hydrophic and corrosion-resistant coating agent contg., for aluminum foils and heat exchangers)

IT Coating materials

(anticorrosive, hydrophic and, for aluminum foils)

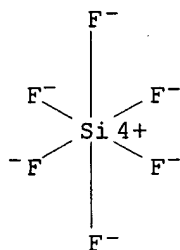
IT 7429-90-5, Aluminum, miscellaneous
 RL: MSC (Miscellaneous)
 (foils and heat exchangers, hydrophic and corrosion-resistant coating agent for)

IT 127-08-2, Potassium acetate 497-19-8, Na₂CO₃, uses 1310-58-3, KOH, uses 1310-73-2, NaOH, uses 6834-92-0, Na₂SiO₃ 7447-40-7, KCl, uses 7447-41-8, LiCl, uses 7601-54-9, Sodium phosphate (Na₃PO₄) 7647-14-5, NaCl, uses 7647-15-6, NaBr, uses 7681-11-0, KI, uses 7681-49-4, NaF, uses 7681-82-5, NaI, uses 7758-02-3, KBr, uses 7789-23-3, KF 10006-28-7, Potassium silicate (K₂SiO₃) 12125-01-8, NH₄F 12125-02-9, NH₄Cl, uses **16961-83-4, H₂SIF₆**
 RL: USES (Uses)
 (hydrophic and corrosion-resistant coating agent contg., for aluminum foils and heat exchangers)

IT **16961-83-4, H₂SIF₆**
 RL: USES (Uses)
 (hydrophic and corrosion-resistant coating agent contg., for aluminum foils and heat exchangers)

RN 16961-83-4 HCAPLUS

CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



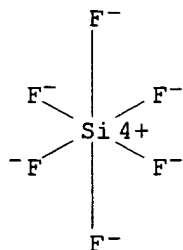
2 H⁺

L60 ANSWER 37 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 1994:60396 HCAPLUS
 DN 120:60396
 TI Method of treating nonferrous **metal** surfaces
 IN Gray, Ralph C.; Pawlik, Michael J.; Kahle, Charles F., II; Prugnol, Paul J.
 PA PPG Industries, Inc., USA
 SO PCT Int. Appl., 26 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM C23C022-07
 ICS C23C022-34; C23C022-48
 CC 56-6 (**Nonferrous Metals** and Alloys)
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9320258	A1	19931014	WO 1993-US2326	19930312
	W: AU, BR, CA, FI, JP, KR, NO				

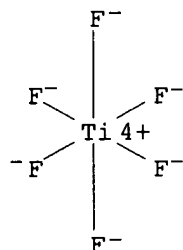
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
 US 5306526 A 19940426 US 1992-862143 19920402
 AU 9338080 A1 19931108 AU 1993-38080 19930312
 AU 670076 B2 19960704
 EP 633949 A1 19950118 EP 1993-907494 19930312
 EP 633949 B1 19960918
 R: AT, BE, DE, DK, ES, FR, GB, IE, IT, NL, SE
 JP 07501585 T2 19950216 JP 1993-517468 19930312
 JP 2843439 B2 19990106
 AT 143063 E 19961015 AT 1993-907494 19930312
 ES 2094533 T3 19970116 ES 1993-907494 19930312
 BR 9306246 A 19980630 BR 1993-6246 19930312
 PRAI US 1992-862143 A 19920402
 WO 1993-US2326 A 19930312
 AB A nonferrous **metal** (e.g., Al) **substrate** is treated with an acid activating agent (e.g., HF) to **dissolve metal oxide film** which may form on the **substrate**, and then treated with an organophosphate or organophosphonate. The treatment provides for improved adhesion and flexibility as well as resistance to humidity, salt spray corrosion, and detergents of subsequently applied coatings.
 ST nonferrous **metal** surface treatment; acid activating agent surface treatment; hydrogen fluoride acid activating agent; organophosphate organophosphonate **metal** surface treatment
 IT Amines, compounds
 RL: FORM (Formation, nonpreparative); PREP (Preparation)
 (coco alkyl, salts, formation of, for surface treatment of nonferrous **metal substrates**, for adhesion and corrosion resistance)
 IT **Metals**, miscellaneous
 RL: MSC (Miscellaneous)
 (nonferrous, surface treatment of, acid activating agent and organophosphate or organophosphonate in, for adhesion and corrosion resistance)
 IT 1310-73-2, Sodium hydroxide, uses 7681-49-4, Sodium fluoride, uses 16961-83-4, Fluorosilicic acid 17439-11-1
 RL: USES (Uses)
 (acid activating agent contg., in surface treatment of nonferrous **metal substrates**, for adhesion and corrosion resistance)
 IT 152060-36-1P 152076-05-6P 152246-94-1P 152246-95-2P
 RL: FORM (Formation, nonpreparative); PREP (Preparation)
 (formation of, for surface treatment of nonferrous **metal substrates**, for adhesion and corrosion resistance)
 IT 11149-84-1
 RL: USES (Uses)
 (**substrate**, surface treatment of, acid activating agent and organophosphate or organophosphonate in, for adhesion and corrosion resistance)
 IT 7429-90-5, Aluminum, properties 7440-66-6, Zinc, properties
 RL: PRP (Properties)
 (**substrate**, surface treatment of, acid activating agent and organophosphate or organophosphonate in, for adhesion and corrosion resistance)
 IT 16961-83-4, Fluorosilicic acid 17439-11-1
 RL: USES (Uses)
 (acid activating agent contg., in surface treatment of nonferrous **metal substrates**, for adhesion and corrosion resistance)

resistance)
 RN 16961-83-4 HCAPLUS
 CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



2 H⁺

RN 17439-11-1 HCAPLUS
 CN Titanate(2-), hexafluoro-, dihydrogen, (OC-6-11)- (9CI) (CA INDEX NAME)



● 2 H⁺

L60 ANSWER 38 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 1993:632950 HCAPLUS
 DN 119:232950
 TI Removal of undesirable constituents from flue gases with calcium hydroxide
 IN Farwick, Hermann; Weiler, Helmut; Riepert, Albert; Rummelhohl, Volker
 PA Steag AG, Germany
 SO Eur. Pat. Appl., 9 pp.
 CODEN: EPXXDW
 DT Patent
 LA German
 IC ICM B01D053-34
 CC 59-4 (Air Pollution and Industrial Hygiene)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	EP 510747	A1	19921028	EP 1992-201026	19920402
	R: PT				
	DE 4113793	A1	19921105	DE 1991-4113793	19910426

DE 4113793 C2 19940804
 WO 9219362 A1 19921112 WO 1992-EP732 19920402

W: JP, US

RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE

PRAI DE 1991-4113793 19910426

AB Hot flue gases are sprayed with alk. earth oxides or hydroxides (e.g., Ca(OH)_2) and cooled to bind the pollutants in particulate form for dedusting. The pollutants are condensed as the gas is cooled below the dew point and neutralized to give the particulate salts or compds. Hydrogen halides (HF) and SO_3 are neutralized. SO_2 is converted to SO_3 upstream of the treatment site. Si compds., esp. H_2SiF_6 , are removed by hydrolysis to SiO_2 and CaF_2 in the treatment process.

ST pollution removal gas calcium hydroxide; flue gas cleaning dedusting

IT Flue gases

(halides and sulfur **oxides removal** from hot, with calcium hydroxide injection followed by dedusting)

IT Alkaline earth halides

Sulfates, miscellaneous

RL: **REM (Removal or disposal)**; PROC (Process)

(**removal** of, from flue gases, with calcium hydroxide injection followed by dedusting)

IT 7446-09-5, Sulfur dioxide, miscellaneous

RL: **REM (Removal or disposal)**; PROC (Process)

(**removal** of, as sulfur trioxide, from flue gases, with calcium hydroxide injection followed by dedusting)

IT 7440-21-3D, Silicon, compds. **16961-83-4**

RL: **REM (Removal or disposal)**; PROC (Process)

(**removal** of, by hydrolysis, from flue gases, with calcium hydroxide injection followed by dedusting)

IT 11104-93-1, Nitrogen **oxide**, miscellaneous

RL: **REM (Removal or disposal)**; PROC (Process)

(**removal** of, catalytic, from flue gases, after treatment with calcium hydroxide and dedusting)

IT 7446-11-9, Sulfur trioxide, miscellaneous 7631-86-9, Silica,

miscellaneous 7664-39-3, Hydrogen fluoride, miscellaneous

RL: **REM (Removal or disposal)**; PROC (Process)

(**removal** of, from flue gases, with calcium hydroxide injection followed by dedusting)

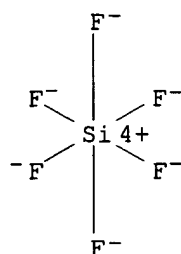
IT **16961-83-4**

RL: **REM (Removal or disposal)**; PROC (Process)

(**removal** of, by hydrolysis, from flue gases, with calcium hydroxide injection followed by dedusting)

RN 16961-83-4 HCAPLUS

CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)

2 H⁺

L60 ANSWER 39 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 1993:438926 HCAPLUS

DN 119:38926

TI Polishing of silicon single crystal wafer mirror face

IN Abe, Yasuhiko

PA Kyoto Handotai Kk, Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C30B029-06

CC 76-3 (Electric Phenomena)

Section cross-reference(s): 72

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04367593	A2	19921218	JP 1991-169000	19910614
PRAI	JP 1991-169000		19910614		

AB The method involves (1) immersing a Si wafer and an anode contg. Pt or a Pt-plating metal wiring in a mixt. soln. of dild. H₂SO₃ and hydrofluoric acid, (2) electrolyzing at .gtoreq.0.5 A/cm² to generate O₃, (3) ozone-decomp. to oxidize Si by high active O, and (4) treating SiO₂ with hydrofluoric acid to remove H₂SiF₆.

ST silicon single crystal wafer polishing

IT Semiconductor devices

(chem. polishing of silicon wafer mirror face in manuf. of, electrolysis solns. for)

IT Polishing

(chem., of silicon single crystal wafers, in sulfuric acid and hydrofluoric acid)

IT 7440-06-4, Platinum, uses

RL: USES (Uses)

(anodes, for ozone generation, in silicon mirror-polishing)

IT 7440-21-3, Silicon, uses

RL: USES (Uses)

(mirror-polishing of, by hydrofluoric acid and dild. sulfuric acid)

IT 10028-15-6P, Ozone, preparation

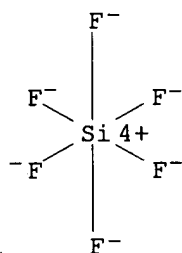
RL: PREP (Preparation)

(prepn. of, by electrolysis, for silicon wafer oxidn.)

IT 16961-83-4

RL: USES (Uses)

(removing of, in silicon wafer polishing)
 IT 7631-86-9, Silicon oxide (SiO₂), uses
 RL: USES (Uses)
 (removing of, with hydrofluoric acid, in silicon wafer
 polishing, as fluorosilicic acid)
 IT 57-13-6, Urea, uses 64-19-7, Acetic acid, uses 7553-56-2, Iodine, uses
 RL: USES (Uses)
 (silicon single crystal mirror-polishing soln. contg.)
 IT 7664-93-9, Sulfuric acid, uses
 RL: USES (Uses)
 (silicon single crystal wafer mirror-polishing with hydrochloric acid
 and)
 IT 7664-39-3, Hydrofluoric acid, uses
 RL: USES (Uses)
 (silicon single crystal wafer mirror-polishing with sulfuric acid and)
 IT 16961-83-4
 RL: USES (Uses)
 (removing of, in silicon wafer polishing)
 RN 16961-83-4 HCAPLUS
 CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



2 H⁺

L60 ANSWER 40 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 1993:237348 HCAPLUS
 DN 118:237348
 TI Study on a new coal cleaning technology
 AU Wang, Tonghua; Li, Hanxu; Zheng, Mingdong; Li, Hua; Cui, Zhidong
 CS Dalian Univ. Technol., Dalian, 116012, Peop. Rep. China
 SO Meitan Zhuanhua (1992), 15(3), 69-74
 CODEN: MEZHE6; ISSN: 1004-4248
 DT Journal
 LA Chinese
 CC 51-17 (Fossil Fuels, Derivatives, and Related Products)
 AB A new coal cleaning technol. with F-contg. acids was studied. The
 deashing effects and mechanism of the F-contg. acids, HF recovery from
 F-contg. waste acid, and defluorination of the cleaned coal were
 investigated. An optimum coal cleaning process shows that F-contg. acids
 were the efficient agents for cleaning coal; HF acid effectively removed
 SiO₂, Al₂O₃, and Fe₂O₃ components from minerals, whereas H₂SiF₆
 acid removed Al₂O₃, Fe₂O₃, CaO, and MgO components from minerals. The
 coal cleaning process can ensure an ash content in the cleaned coal of
 <0.5% (dry basis). The most of HF in the waste acid was recovered by

chem. adsorption on NaF and reused for cleaning. The F content in the cleaned coal was decreased to that of original matrix by a 2-stage defluorination treatment.

ST coal deashing demineralization defluorination; hydrofluoric acid coal deashing; fluorine acid coal deashing

IT Coal treatment
(deashing, with fluorine-contg. acids)

IT 7664-39-3, Hydrofluoric acid, uses **16961-83-4**

RL: USES (Uses)

(coal deashing by)

IT 1305-78-8, Calcium **oxide**, miscellaneous 1309-37-1, Ferric **oxide**, miscellaneous 1309-48-4, Magnesium **oxide**, miscellaneous 1344-28-1, Aluminum **oxide** (Al₂O₃), miscellaneous 7631-86-9, Silicon dioxide, miscellaneous

RL: **REM (Removal or disposal)**; PROC (Process)

(**removal** of, from coal, by deashing with fluorine-contg. acids)

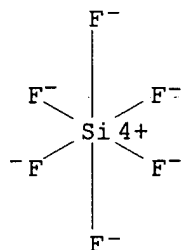
IT **16961-83-4**

RL: USES (Uses)

(coal deashing by)

RN 16961-83-4 HCAPLUS

CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



2 H⁺

L60 ANSWER 41 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 1992:655381 HCAPLUS

DN 117:255381

TI Zinc recovery from spent zinc-oxide absorbent of hydrogen sulfide

IN Chumaevskii, V. A.; Evgen'eva, M. I.; Kapralov, A. V.; Andreev, V. I.

PA Buisk Chemical Plant, USSR

SO U.S.S.R.

From: Izobreteniya 1992, (6), 113.

CODEN: URXXAF

DT Patent

LA Russian

IC ICM C22B007-00

ICS C22B019-00

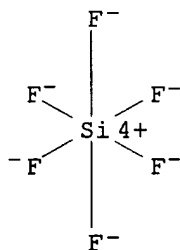
CC 54-2 (Extractive **Metallurgy**)

Section cross-reference(s): 59

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI SU 1712434 A1 19920215 SU 1989-4761529 19891120
 PRAI SU 1989-4761529 19891120
 AB Recovery of Zn by acid leaching is increased by using a mixt. of H₃PO₄, HNO₃, and H₂SiF₆ in aq. solns. at the resp. content ratio of 1:(0.85-1.87):(0.0168-0.0178):(2.099-3.071) based on the anions and H₂O. The spent absorbent is added at 0.80-0.95 of stoichiometric cation sum calcd. for the formation of monosubstituted acid salts. The adsorbent is preferably added at 152-178.6 kg ZnO/h-m³ into the acidic soln. at 20-30.degree., and leached for 1-3 h.
 ST hydrogen sulfide absorbent acid leaching; zinc leaching spent oxide absorbent
 IT Absorbents
 (zinc oxide, leaching of hydrogen sulfide-satd., aq. acid mixt. for)
 IT 1314-13-2, Zinc oxide (ZnO), uses
 RL: USES (Uses)
 (absorbent, for hydrogen sulfide, acidic leaching of spent)
 IT **16961-83-4** 7664-38-2, Phosphoric acid, uses 7697-37-2, Nitric acid, uses
 RL: PROC (Process)
 (leaching mixt. with, for spent absorbent based on zinc oxide, zinc recovery by)
 IT 7440-66-6P, Zinc, preparation
 RL: PUR (Purification or recovery); PREP (Preparation)
 (recovery of, from oxide absorbent, acidic leaching mixt. for)
 IT 7783-06-4, Hydrogen sulfide, miscellaneous
 RL: **REM (Removal or disposal)**; PROC (Process)
 (**removal** of, spent zinc **oxide** adsorbent in, acidic leaching of)
 IT **16961-83-4**
 RL: PROC (Process)
 (leaching mixt. with, for spent absorbent based on zinc oxide, zinc recovery by)
 RN 16961-83-4 HCAPLUS
 CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)

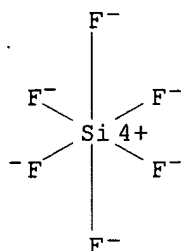


2 H⁺

L60 ANSWER 42 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 1992:260521 HCAPLUS
 DN 116:260521
 TI Removal of solder from molybdenum masks by etching
 IN Hata, Ichiro; Samejima, Teiichiro
 PA Neos Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 3 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C23G001-10
 ICS C23F001-02
 CC 56-6 (Nonferrous **Metals** and Alloys)
 Section cross-reference(s): 76
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 03257185	A2	19911115	JP 1990-56260	19900307
PRAI	JP 1990-56260		19900307		
AB	The solder residue on Mo masks is removed by etching with an acid during contact of the mask with a chem. more active metal (esp. Cu, Fe, Al, Zn, Sn, or Pb). Thus, the Mo masking board (area 450 cm ²) precoated with a solder 0.15 mm thick was cleaned by immersion into aq. soln. (contg. 35% H ₂ SiF ₆ 45 and 35% H ₂ O ₂ 3%) for 30 min at 60.degree. while in contact with Cu sheet (area 10 cm ² , thickness 1 mm), resulting in no wt. loss of Mo, vs. 1620 mg wt. loss when similarly cleaned without the Cu contact.				
ST	molybdenum mask solder etching acid; copper contact molybdenum mask cleaning; fluorosilicic acid cleaning molybdenum mask				
IT	Etching (acidic, of solder on molybdenum mask, copper contact for preventing corrosion in)				
IT	Solders (removal of, from molybdenum masks, acid etching for, with copper contact to prevent corrosion)				
IT	7439-98-7, Molybdenum, miscellaneous RL: MSC (Miscellaneous) (cleaning of, solder etching in, with copper contact to prevent corrosion)				
IT	7429-90-5, Aluminum, miscellaneous 7439-92-1, Lead, miscellaneous 7440-31-5, Tin, miscellaneous 7440-50-8, Copper, miscellaneous 7440-66-6, Zinc, miscellaneous RL: MSC (Miscellaneous) (contact with, on molybdenum mask etched in acidic bath to remove solder, corrosion loss prevention by)				
IT	7722-84-1, Hydrogen peroxide , miscellaneous 16961-83-4 , Fluosilicic acid RL: MSC (Miscellaneous) (etching bath contg., solder removal from molybdenum mask by, with copper contact to prevent corrosion)				
IT	16961-83-4 , Fluosilicic acid RL: MSC (Miscellaneous) (etching bath contg., solder removal from molybdenum mask by, with copper contact to prevent corrosion)				
RN	16961-83-4 HCAPLUS				
CN	Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME).				



② H⁺

L60 ANSWER 43 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 1992:158062 HCAPLUS

DN 116:158062

TI Preparation of catalysts for nitrogen **oxides removal**
from boiler flue gas

IN Fukuda, Yuji; Kato, Yasuyoshi

PA Babcock-Hitachi K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B01J033-00

ICS B01D053-36; B01J037-00

CC 59-4 (Air Pollution and Industrial Hygiene)

Section cross-reference(s): 67

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 03262542	A2	19911122	JP 1990-62009	19900313
PRAI	JP 1990-62009		19900313		

AB NO_x is removed from coal-fired boiler flue gases by redn. with NH₃ in the presence of a fixed bed of redn. catalysts loaded with 0.1-10 wt.% SiO₂. The catalyst may contain TiO₂, Mo oxides, and V oxides. The catalyst bed is preferably passed through a mixt. of steam and silicate ester-and/or H₂SiF₄-contg. gas at 100-200.degree. to form a silica protective layer on the honeycomb support surface. The catalyst service life is significantly extended.

ST boiler flue gas redn catalyst; silica coating redn catalyst protection; nitrogen **oxide removal** flue gas

IT Reduction catalysts

(titania-molybdenum oxide, on silica-coated honeycomb supports, for boiler flue gas treatment)

IT Flue gases

(boiler, nitrogen **oxides removal** from, by redn. with ammonia, catalysts for, silica-contg. layer-coated)

IT 11098-99-0, Molybdenum oxide 11099-11-9, Vanadium oxide 13463-67-7, Titania, uses

RL: CAT (Catalyst use); USES (Uses)

(catalysts contg., silica-contg. protective layer on, for nitrogen **oxides removal** from flue gases)

IT 11099-06-2, Silicic acid ethyl ester 12002-26-5, Silicic acid methyl

ester **16961-83-4**

RL: OCCU (Occurrence)

(mixed gas contg. steam and, for forming silica protective layer on redn. catalysts for nitrogen **oxide removal** from boiler flue gas)

IT 7631-86-9, Silica, miscellaneous

RL: MSC (Miscellaneous)

(protective layer contg., on redn. catalysts for nitrogen **oxide removal** from boiler flue gas)

IT 11104-93-1, Nitrogen **oxide**, miscellaneous

RL: **REM (Removal or disposal)**; PROC (Process)

(**removal** of, from boiler flue gases, by redn. with ammonia, catalysts for, silica-contg. protecting layer on)

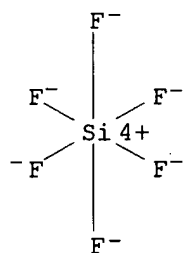
IT **16961-83-4**

RL: OCCU (Occurrence)

(mixed gas contg. steam and, for forming silica protective layer on redn. catalysts for nitrogen **oxide removal** from boiler flue gas)

RN 16961-83-4 HCAPLUS

CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



2 H⁺

L60 ANSWER 44 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 1991:67437 HCAPLUS

DN 114:67437

TI Cleaning and treatment of ceramic parts having thin tungsten or molybdenum surface films for electroless coating with gold

IN Brandenburger, Juergen; Thimm, Alfred

PA Hoechst CeramTec A.-G., Germany

SO Ger. Offen., 3 pp.

CODEN: GWXXBX

DT Patent

LA German

IC ICM C04B041-88

ICS C23C018-42; C23C018-18; C04B035-10; H01L021-48; H01L023-498; H01L023-15

CC 56-6 (**Nonferrous Metals** and Alloys)

Section cross-reference(s): 57, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	DE 3917867	A1	19901206	DE 1989-3917867	19890601

	FR 2647780	A1	19901207	FR 1990-6570	19900528
	FR 2647780	B1	19920904		
	JP 03036282	A2	19910215	JP 1990-143274	19900531
PRAI	DE 1989-3917867		19890601		

AB The parts are cleaned subsequently in an alk. soln., an acid soln., in aq. HF-H₂SiF₆, an alk. bath of pH .gtoreq.10, and in dild. H₂SO₄ of pH .ltoreq.3. The treated parts are coated with Au in an aq. soln. contg. KAu(CN)₂ and used in electronics.

ST **cleaning** tungsten **coating** ceramics; molybdenum **coating** ceramics **cleaning**; gold **coating** tungsten ceramics **cleaning**; fluorosilicic acid **cleaning** **coating** ceramics; hydrofluoric acid **cleaning** **coating** ceramics; electronics gold tungsten coating ceramics

IT Ceramic materials and wares
(aluminum **oxide**, **cleaning** of molybdenum- or tungsten-coated, for electroless coating with gold)

IT Coating process
(electroless, of gold, on molybdenum- or tungsten-coated ceramic parts for electronics, cleaning and pretreatment in)

IT 1344-28-1
RL: USES (Uses)
(ceramic materials and wares, aluminum **oxide**, **cleaning** of molybdenum- or tungsten-coated, for electroless coating with gold)

IT 7664-39-3, Hydrofluoric acid, uses and miscellaneous
RL: USES (Uses)
(cleaning and treatment with fluorosilicic acid and, of molybdenum- or tungsten-coated ceramics, for electroless coating with gold)

IT **16961-83-4**, Fluorosilicic acid
RL: USES (Uses)
(cleaning and treatment with hydrofluoric acid and, of molybdenum- or tungsten-coated ceramics, for electroless coating with gold)

IT 7664-93-9, Sulfuric acid, uses and miscellaneous
RL: USES (Uses)
(cleaning and treatment with, of molybdenum- or tungsten-coated ceramics, for electroless coating with gold)

IT 7439-98-7, Molybdenum, uses and miscellaneous 7440-33-7, Tungsten, uses and miscellaneous
RL: USES (Uses)
(cleaning of ceramics coated with, for electroless coating with gold)

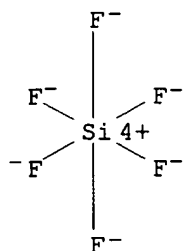
IT 1344-28-1, Alumina, uses and miscellaneous
RL: USES (Uses)
(cleaning of molybdenum- or tungsten-coated, for electroless coating with gold)

IT 7440-57-5, Gold, uses and miscellaneous
RL: USES (Uses)
(coating with, on molybdenum- or tungsten-coated ceramics, electroless, cleaning and pretreatment in)

IT **16961-83-4**, Fluorosilicic acid
RL: USES (Uses)
(cleaning and treatment with hydrofluoric acid and, of molybdenum- or tungsten-coated ceramics, for electroless coating with gold)

RN 16961-83-4 HCAPLUS

CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



●2 H⁺

L60 ANSWER 45 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 1989:430260 HCAPLUS

DN 111:30260

TI Formation of silicon dioxide film

IN Hayashi, Shigeo; Hishinuma, Akimitsu; Kitaoka, Masaki; Aida, Takuji;
Kawahara, Hideo; Deki, Shigeto

PA Nippon Sheet Glass Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C23C018-00

ICS C03C017-02; C04B041-87

CC 72-7 (Electrochemistry)

Section cross-reference(s): 55, 56

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01017872	A2	19890120	JP 1987-175507	19870714
	JP 06060415	B4	19940810		
PRAI	JP 1987-175507		19870714		

AB A method for forming a SiO₂ film on a substrate is described, which involves contacting the substrate to a SiO₂ supersatn. soln. prepd. by dissolving a metal in a SiO₂ satn. soln. of **H₂SiF₆**. The amt. of the metal dissolved in the soln. is controlled by dipping an electrode of the metal in the soln. and applying a potential between the electrode and soln. The rate of film formation is controlled. Specifically, the metal comprises .gtoreq.1 of Mg, Al, Fe, Co, Ni, Cu, and Sn, or their alloys.

ST silica film deposition metal **dissoln**

IT Transition metals, reactions

RL: PEP (Physical, engineering or chemical process); PROC (Process)
(electrochem. dissoln. of, in formation of silica films)

IT **Coating** process

(electrochem. metal **dissoln.** in, with silica)

IT Glass, oxide

RL: USES (Uses)

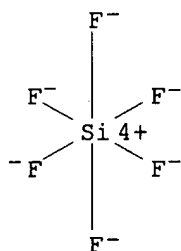
(formation of silica **films** on, electrochem. metal
dissoln. in)

IT **16961-83-4**

RL: PRP (Properties)

(electrochem. dissoln. of metals in silica-contg., in formation of

films)
 IT 7429-90-5, Aluminum, reactions 7439-89-6, Iron, reactions 7439-95-4, Magnesium, reactions 7440-02-0, Nickel, reactions 7440-48-4, Cobalt, reactions 7440-50-8, Copper, reactions 7440-66-6, Zinc, reactions
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (electrochem. dissoln. of, in formation of silica films)
 IT 7631-86-9P, Silica, uses and miscellaneous
 RL: PREP (Preparation); USES (Uses)
 (films, formation of, electrochem. dissoln. of metals in)
 IT 7631-86-9
 RL: PRP (Properties)
 (glass, formation of silica films on, electrochem. metal dissoln. in)
 IT 16961-83-4
 RL: PRP (Properties)
 (electrochem. dissoln. of metals in silica-contg., in formation of films)
 RN 16961-83-4 HCAPLUS
 CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



2 H⁺

L60 ANSWER 46 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 1989:119580 HCAPLUS

DN 110:119580

TI Primer coating of aluminum strip for ink adhesion in can top manufacture

IN Kikuchi, Kazuo

PA Furukawa Aluminum Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C23C022-68

CC 56-6 (Nonferrous Metals and Alloys)

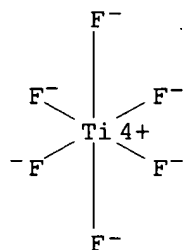
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63149387	A2	19880622	JP 1986-296287	19861212
PRAI	JP 1986-296287		19861212		

AB The Al or Al-alloy strip is coated with a soln. contg an alc. and/or water as well as organosilane monomer having >2 functional groups/mol. for a

good top coating. Optionally, a fluorinated Ti and/or Zr compd. is present in the soln. Thus, H38 Al strip was coated with aq. primer contg. methacryloxypropyltrimethoxysilane 10, EtOH 20, H₂ZrF₆ 0.5, and H₂TiF₆ 0.5 g/L. The coated strip was dried at 150.degree., inked with MKK94, dried at 150.degree., and bake painted with a polyester at 180.degree.. The painted strip was cold-pressed to manuf. can lids that passed spalling and salt-water corrosion tests.

ST aluminum **strip primer coating**; can lid aluminum **strip coating**; organosilane primer aluminum coating; titanium compd aluminum **strip coating**; zirconium compd aluminum **strip coating**
 IT Coating process
 (primer, of aluminum strip for can lids)
 IT Cans
 (lids, aluminum **strip** for, primer **coating** bath for)
 IT 919-30-2 1760-24-3 2530-85-0 12021-95-3 16962-40-6
 17439-11-1
 RL: USES (Uses)
 (primer coating in bath contg., of aluminum strip for can lid manuf.)
 IT 7429-90-5, Aluminum, uses and miscellaneous
 RL: USES (Uses)
 (primer **coating** on **strip** of, for can lids)
 IT **17439-11-1**
 RL: USES (Uses)
 (primer coating in bath contg., of aluminum strip for can lid manuf.)
 RN 17439-11-1 HCAPLUS
 CN Titanate(2-), hexafluoro-, dihydrogen, (OC-6-11)- (9CI) (CA INDEX NAME)



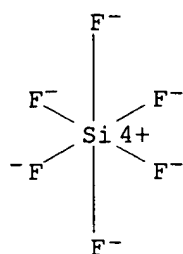
2 H⁺

L60 ANSWER 47 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 1989:99690 HCAPLUS
 DN 110:99690
 TI Paste for removing of steel welding scale and discolored areas
 IN Gwardys, Stanislaw; Struszczyk, Henryk; Koch, Stanislaw; Ignacik, Jozef;
 Czapla, Kazimierz; Ciesielski, Wlodzimierz
 PA Politechnika Lodzka, Pol.; Fabryka Urzadzen Przemyslu Spozywczego
 "Faspoma"
 SO Pol., 2 pp.
 CODEN: POXXA7
 DT Patent
 LA Polish
 IC ICM C09K013-08

CC 55-6 (Ferrous **Metals** and Alloys)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	PL 142387	B1	19871031	PL 1984-250079	19841017
PRAI	PL 1984-250079		19841017		
AB	The paste consists of HF 7-35, H ₂ SiF ₆ 3-15, H ₂ O ₂ 5-15, ethylene glycol 1-3 wt. parts, microcryst. cellulose (d.p. 40-300, swelling factor 100-500%), and optionally inorg. or org. pigment (TiO ₂ , ZnO) 1-50 wt.% (cellulose basis), glycols (ethylene glycol, propylene glycol) 1-20 wt.% (cellulose basis), and dextrin 1-10 wt. parts. The paste applied to a thickness of .apprx.2 mm is held for .apprx.25 min to dissolve the welding scale and discolored areas, and removed by rinsing with aq. 5-10% Na ₂ CO ₃ . Thus, a paste contg. 40% HF 26, 40% H ₂ SiF ₆ 13, 30% H ₂ O ₂ 12, 50% aq. yellow dextrin soln. 12, Rokafenol N-6 (a polyethylene glycol alkylphenyl ether) 1, Sulfsipol (a sulfated fatty alc.) 1, ethylene glycol 2, and Celuloza MP (a microcryst. cellulose) 33% was applied on welded 1H18N9T stainless steel containers for .apprx.25 min and removed with aq. 10% Na ₂ CO ₃ . Surface of the treated welds was clean and comparable to that of the base metal.				
ST	steel weld scale removal paste; hydrogen peroxide weld scale removal; ethylene glycol weld scale removal; cellulose weld scale removal; dextrin weld scale removal; stainless steel weld scale removal				
IT	Scale (coating)				
	(removal of, from steel welds, paste for)				
IT	Welds				
	(steel, descaling of, paste for)				
IT	107-21-1, Ethylene glycol, uses and miscellaneous 7664-39-3, Hydrofluoric acid, uses and miscellaneous 7722-84-1, Hydrogen peroxide, uses and miscellaneous 9004-34-6, Cellulose, uses and miscellaneous 9004-53-9, Dextrin 16961-83-4 , Fluorosilicic acid (H ₂ SiF ₆) 26027-38-3 119166-96-0, Sulfsipol				
	RL: USES (Uses)				
	(descaling paste contg., for steel welds)				
IT	54611-20-0				
	RL: USES (Uses)				
	(welds, descaling of, paste for)				
IT	12597-69-2				
	RL: PEP (Physical, engineering or chemical process); PROC (Process)				
	(welds, steel, descaling of, paste for)				
IT	16961-83-4 , Fluorosilicic acid (H ₂ SiF ₆)				
	RL: USES (Uses)				
	(descaling paste contg., for steel welds)				
RN	16961-83-4 HCAPLUS				
CN	Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)				

2 H⁺

L60 ANSWER 48 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 1989:12182 HCAPLUS

DN 110:12182

TI Pretreatment of aluminum or aluminum alloy parts for lacquering

IN Beege, Giesela; Mueller, Gerhard; Rausch, Werner

PA Metallgesellschaft A.-G., Fed. Rep. Ger.

SO Ger. Offen., 4 pp.

CODEN: GWXXBX

DT Patent

LA German

IC ICM B05D003-10

ICS B05D007-26; C23G001-12; C23C022-07; C23C022-24; C23C022-34;

B05D001-14; C25D013-00; C23G005-00

CC 56-6 (Nonferrous Metals and Alloys)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3705633	A1	19880901	DE 1987-3705633	19870221
	EP 281176	A1	19880907	EP 1988-200205	19880205
	EP 281176	B1	19910925		
	R: BE, DE, ES, FR, IT, NL, SE				
	ES 2025763	T3	19920401	ES 1988-200205	19880205
	JP 01219175	A2	19890901	JP 1988-31042	19880215
	BR 8800681	A	19881004	BR 1988-681	19880219
PRAI	DE 1987-3705633		19870221		

AB Abraded Al or Al alloy (AlMg, AlMgMn, or AlMgSi) parts are annealed and/or pickled and conversion coated. The pickling soln. contains HNO₃, H₂SO₄ and a peroxide, H₂SO₄ and Fe³⁺, HF, or complex HF and Fe³⁺ or peroxide. The conversion coating includes chromating, treatment with H₂TiF₆ and/or H₂ZrF₆, or fluoride-free phosphating. Thus, Al-0.4Mg-1.2% Si alloy parts were heated 2 h at 370.degree., pickled in aq. NaOH, chromated, and lacquered, and the products were scratched and tested for salt-water corrosion to be resistant.

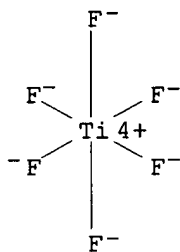
ST aluminum pretreatment chromating lacquering; phosphating aluminum alloy lacquering; hydrofluoric acid pickling aluminum lacquering; sulfuric acid pickling aluminum lacquering; nitric acid pickling aluminum lacquering; fluorotitanic acid pickling aluminum lacquering

IT Coating process

(lacquering, of aluminum or aluminum alloys, pickling and conversion coating for)

IT 12021-95-3 17439-11-1

RL: USES (Uses)
 (in pretreatment of aluminum or aluminum alloys for lacquering)
 IT 7664-39-3, Hydrofluoric acid, properties 7664-93-9, Sulfuric acid,
 properties 7697-37-2, Nitric acid, properties
 RL: PRP (Properties)
 (pickling with, of aluminum or aluminum alloy for pretreatment for
 lacquering)
 IT 11145-10-1 37334-14-8 74566-16-8
 RL: USES (Uses)
 (pretreatment of, for lacquering)
 IT 7429-90-5, Aluminum, properties
 RL: PRP (Properties)
 (pretreatment of, for lacquering)
 IT **17439-11-1**
 RL: USES (Uses)
 (in pretreatment of aluminum or aluminum alloys for lacquering)
 RN 17439-11-1 HCAPLUS
 CN Titanate(2-), hexafluoro-, dihydrogen, (OC-6-11)- (9CI) (CA INDEX NAME)



●2 H⁺

L60 ANSWER 49 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 1988:500515 HCAPLUS
 DN 109:100515
 TI Investigation of corrosion in the development of decontamination solutions
 for nuclear systems - Part II: The corrosion behavior of several nuclear
 materials in fluoride containing, complex forming acid solutions
 AU Wiedemann, Karl Heinz
 CS Paul-Scherrer Inst., Wuerenlingen, CH-5303, Switz.
 SO Werkstoffe und Korrosion (1988), 39(6), 283-6
 CODEN: WSKRAT; ISSN: 0043-2822
 DT Journal
 LA German
 CC 71-8 (Nuclear Technology)
 Section cross-reference(s): 55, 56
 AB Aq. solns. of fluoroboric acid, silicofluoric acid, and potassium
 silicofluoride were used to **dissolve** the radionuclide-contg.
oxide layers on Ni-Cr-alloys of He cooled HTR gas **turbines**
 . In these solns. the Ni-Cr-alloy Nimocast 713LC and Mo-alloy TZM as
turbine blade materials were only slightly corroded without
 pitting corrosion. However, they caused heavy pitting corrosion on the
 mild steel 21CrMoV511 of the **turbine** rotor. The extensive
 corrosion rates of mild steel were reduced by .1toeq.2 orders of

magnitude, by adding suitable, soln. specific inhibitors to the solns.

ST HTR gas **turbine** material corrosion; **oxide layer dissoln** gas **turbine**; reactor material decontamination

IT **Turbines**
(nuclear, corrosion by decontamination solns. for)

IT Decontamination
(of nuclear power plant **turbines**)

IT **Oxides**, uses and miscellaneous
RL: USES (Uses)
(**removal** of **layers** of, on nuclear power plant **turbines**, decontamination solns. for)

IT Nuclear reactors
(power plants, decontamination solns. for gas **turbines** of)

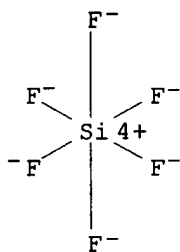
IT 11135-86-7, TZM 12606-58-5 39323-75-6, 21CrMoV511
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(corrosion of, in nuclear power plant **turbine** decontamination solns.)

IT 103-85-5 7681-11-0, properties 16871-90-2 16872-11-0
16961-83-4
RL: PROC (Process)
(decontamination soln. contg., for nuclear reactor gas **turbine**)

IT **16961-83-4**
RL: PROC (Process)
(decontamination soln. contg., for nuclear reactor gas **turbine**)

RN 16961-83-4 HCAPLUS

CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)

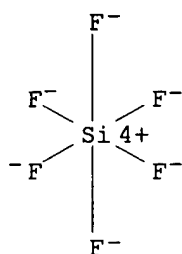


2 H⁺

L60 ANSWER 50 OF 65 HCAPLUS COPYRIGHT 2003 ACS
AN 1987:124626 HCAPLUS
DN 106:124626
TI Formation of silicon dioxide coatings
IN Aida, Takuji; Nagayama, Hirotugu; Kawahara, Hideo
PA Nippon Sheet Glass Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C03C015-00

ICA C23C018-12
 CC 57-1 (Ceramics)
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 61281047	A2	19861211	JP 1985-123254	19850606
	JP 05085491	B4	19931207		
	US 5073408	A	19911217	US 1990-580356	19900907
	US 5132140	A	19920721	US 1991-647086	19910129
PRAI	JP 1985-123254		19850606		
	US 1986-869423		19860602		
	US 1989-338503		19890414		
	US 1990-580356		19900907		
AB	A H2SiF6 soln. contg. supersatd. SiO2, prepd. by heating a SiO2-satd. or subsatd. soln., is made in contact with substrates for forming SiO2 coatings. The soln. is satd. or subsatd. with SiO2 at <35.degree., and the temp. raising for coating is >10.degree., but the temp. during coating is <70.degree.. Thus, 2 M H2SiF6 solns. were satd. with SiO2 gel at 15, 10, and 5.degree., the solns. were heated to 40.degree., and soda-lime glass plates were immersed in the soln. for 16 h. The thicknesses of SiO2 layers formed were 20, 32, and 92 nm, resp. The spent soln. could be reused or be treated for discharging. A spent soln. dild. by a factor of 10, neutralized to pH 12 with Ca(OH)2, and filtered had a residual F- of 15 vs. 100 ppm for a spent soln. from a control process adding H3BO3 to H2SiF6 . These coatings are useful as antireflection films.				
ST	silica coating fluorosilicic acid glass; waste silica coating fluoride removed				
IT	Optical materials (antireflective films, silica, formation of, from fluorosilicic acid solns.)				
IT	7631-86-9, Silica, uses and miscellaneous RL: USES (Uses) (coating with, antireflection, from supersatd. fluorosilicic acid solns.)				
IT	16961-83-4 RL: USES (Uses) (contg. supersatd. silica, for formation of antireflection silica coatings)				
IT	16984-48-8, Fluoride, uses and miscellaneous RL: REM (Removal or disposal) ; PROC (Process) (removal of, from spent fluorosilicic acid solns. for antireflection silica coating)				
IT	16961-83-4 RL: USES (Uses) (contg. supersatd. silica, for formation of antireflection silica coatings)				
RN	16961-83-4 HCAPLUS				
CN	Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)				



●2 H⁺

L60 ANSWER 51 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 1986:118622 HCAPLUS

DN 104:118622

TI Surface-treated steel sheets

IN Shimizu, Nobuyoshi; Fujimoto, Terunori; Inui, Tsuneo; Ishida, Masatoki

PA Toyo Kohan Co., Ltd., Tokyo, Japan

SO Brit. UK Pat. Appl., 18 pp.

CODEN: BAXXDU

DT Patent

LA English

IC ICM C25D005-10

ICS C25D009-08

CC 72-8 (Electrochemistry)

Section cross-reference(s): 17, 55, 56

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 2158842	A1	19851120	GB 1984-12773	19840518
	GB 2158842	B2	19880203		
PRAI	GB 1984-12773		19840518		

AB The steel sheet has a bottom layer contg. Cr .gtoreq.30; middle layer Sn or Sn-Ni alloy .gtoreq.10 mg/m² contg. Ni 20-60 wt.%; and a top layer of hydrated Cr oxide 2-18 mg/m², calcd. as Cr. The sheets are prepd. by (a) Cr electroplating a steel base to form a layer of Cr and hydrated Cr oxide; (b) Sn or Sn-Ni alloy plating under conditions sufficiently acidic to substantially **dissolve** the hydrated Cr **oxide**; or cathodically treating the Cr-plated steel base in acid soln. to **remove** the Cr **oxide** hydrate with subsequent Sn or Sn-Ni alloy plating; (c) chromating to form a layer of Cr oxide hydrate. The 3-layer steel sheets, weldable and corrosion-resistant, are used to manuf. food cans.

ST chromium tin nickel electroplating steel; hydrated chromium oxide layer steel; surface treatment steel sheet can; food can chromated electroplated steel

IT Food

(cans for, chromated tin- or tin-nickel alloy-electroplated steel for)

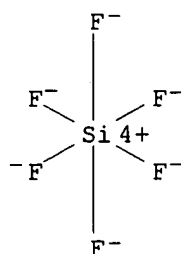
IT Cans

(chromated tin- or tin-nickel alloy-electroplated steel for)

IT Coating materials

(chromates, on chromium- and tin- or tin-nickel alloy-electroplated steel, for cans)

- IT Alkali **metal** fluorides
 RL: PRP (Properties)
 (in electroplating of chromium on steel, with subsequent tin or tin-nickel alloy plating and chromating)
- IT Coating process
 (chromating, electrochem., on tin or tin-nickel-plated steel)
- IT 7440-31-5, uses and miscellaneous 12658-27-4
 RL: PRP (Properties)
 (electroplating of, on chromium-plated steel, with subsequent chromating)
- IT 7440-47-3, uses and miscellaneous
 RL: PRP (Properties)
 (electroplating of, on steel, with subsequent tin or tin-nickel alloy plating and chromating)
- IT 50814-20-5P
 RL: FORM (Formation, nonpreparative); PREP (Preparation)
 (formation of, in chromating of tin- or tin-iron alloy-electroplated steel)
- IT 7664-39-3, uses and miscellaneous 7664-93-9, uses and miscellaneous
 7664-93-9D, alkali **metal** salts 7681-49-4, uses and
 miscellaneous 7782-99-2D, alkali **metal** salts 7783-18-8
 7783-20-2, uses and miscellaneous 7784-18-1 10043-01-3 10196-04-0
 12125-01-8
 RL: USES (Uses)
 (in electroplating of chromium on steel, with subsequent tin or tin-nickel alloy plating and chromating)
- IT 96-77-5 96-77-5D, alkali **metal** salts 1333-39-7 1333-39-7D,
 alkali **metal** salts 1341-49-7 13686-28-7D, alkali
metal salts 13826-83-0 14874-70-5D, alkali **metals**
 16872-11-0 16893-85-9 16919-19-0 **16961-83-4** 17084-08-1D,
 alkali **metals** 100779-48-4 100779-49-5
 RL: PRP (Properties)
 (in electroplating of chromium on steel, with subsequent tin or tin-nickel alloy plating and chromating)
- IT 7647-01-0, uses and miscellaneous
 RL: USES (Uses)
 (in **removal** of chromium **oxide** hydrate layer on
 chromium-electroplated steel prior to tin or tin-alloy electroplating
 and chromating)
- IT **16961-83-4**
 RL: PRP (Properties)
 (in **removal** of chromium **oxide** hydrate layer on
 chromium-electroplated steel prior to tin or tin-alloy electroplating
 and chromating)
- IT **16961-83-4**
 RL: PRP (Properties)
 (in electroplating of chromium on steel, with subsequent tin or tin-nickel alloy plating and chromating)
- RN 16961-83-4 HCAPLUS
- CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)

2 H⁺

RL: PRP (Properties)

(in **removal** of chromium **oxide** hydrate layer on
chromium-electroplated steel prior to tin or tin-alloy electroplating
and chromating)

L60 ANSWER 52 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 1986:118613 HCAPLUS

DN 104:118613

TI Three-layer tin-free steel

IN Fujimoto, Terunori; Shimizu, Nobuyoshi; Shimizu, Mutsuhiro; Yanagihara, Kazunori; Miyachi, Akio; Inui, Tsuneo

PA Toyo Kohan Co., Ltd., Tokyo, Japan

SO Ger. Offen., 37 pp.

CODEN: GWXXBX

DT Patent

LA German

IC ICM C25D005-10

ICS C25D005-12; C25D009-08; C25D011-38

CC 72-8 (Electrochemistry)

Section cross-reference(s): 55

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3414980	A1	19851107	DE 1984-3414980	19840419
PRAI	DE 1984-3414980		19840419		

AB The steel has a base layer of Cr, an intermediate layer of Ni, and a surface layer of Cr oxide hydrate. The continuous process for forming these layers comprises: (a) Cr plating a base steel to form a layer of Cr and Cr oxide hydrate; (b) Ni plating with sufficient acid to **dissolve** the Cr **oxide** hydrate or cathodic treatment in acid soln. to **remove** the Cr **oxide** hydrate, and then Ni plating; (c) producing a Cr oxide hydrate layer on the Cr- and Ni-plated base steel. The Sn-free steel produced is suitable for high-speed prepn. of welded cans without removal of the plated layer in the welded region.

ST multilayer plating steel can; chromium electroplating steel can; nickel electroplating steel can; coating chromium oxide hydrate steel; chromating electroplated steel can

IT Coating materials

(chromates, on chromium- and nickel-electroplated steel, for cans)

IT Alkali **metal** fluorides

RL: PRP (Properties)

(in electroplating of chromium on steel, with subsequent chromium

oxide hydrate **removal** and nickel plating and chromating)

IT Cans
(steel, contg. three layers)

IT Coating process
(chromating, electrochem., on nickel plated steel)

IT 50814-20-5
RL: PRP (Properties)
(coating of, on steel, following chromium electroplating, chromium oxide hydrate **removal**, and nickel plating)

IT 7440-02-0, uses and miscellaneous
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(electroplating of, on chromium-plated steel, with subsequent chromating)

IT 7440-47-3, uses and miscellaneous
RL: PRP (Properties)
(electroplating of, on steel, with subsequent nickel plating and chromating)

IT 7664-93-9D, alkali **metal** salts 7782-99-2D, alkali **metal** salts 7783-18-8 7783-20-2, uses and miscellaneous 7784-18-1
RL: USES (Uses)
(in electroplating of chromium on steel, with subsequent chromium oxide hydrate **removal** and nickel plating and chromating)

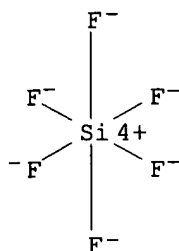
IT 96-77-5 96-77-5D, alkali **metal** salts 1333-39-7 1333-39-7D, alkali **metal** salts 1341-49-7 10196-04-0 12125-01-8 13686-28-7D, alkali **metal** salts 13826-83-0 14489-25-9 14874-70-5D, alkali **metals** 16872-11-0 16919-19-0 **16961-83-4** 17084-08-1D, alkali **metals** 100779-48-4 100779-49-5
RL: PRP (Properties)
(in electroplating of chromium on steel, with subsequent chromium oxide hydrate **removal** and nickel plating and chromating)

IT 7647-01-0, uses and miscellaneous 7664-39-3, uses and miscellaneous 7664-93-9, uses and miscellaneous 10043-35-3, uses and miscellaneous
RL: USES (Uses)
(in **removal** of chromium oxide hydrate layer on chromium-electroplated steel prior to nickel electroplating and chromating)

IT **16961-83-4**
RL: PRP (Properties)
(in electroplating of chromium on steel, with subsequent chromium oxide hydrate **removal** and nickel plating and chromating)

RN 16961-83-4 HCAPLUS

CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



●2 H⁺

L60 ANSWER 53 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 1985:83118 HCAPLUS
 DN 102:83118
 TI Wear-resistant layers on the surfaces of titanium or titanium alloy parts
 IN Thoma, Martin
 PA Motoren- und Turbinen-Union Muenchen G.m.b.H., Fed. Rep. Ger.
 SO Ger. Offen., 8 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 IC C23C017-00; C23C003-02; C23C011-14; C23F001-00; C25D003-12
 CC 56-6 (**Nonferrous Metals** and Alloys)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3321231	A1	19841213	DE 1983-3321231	19830611
	DE 3321231	C2	19851031		
	EP 128383	A1	19841219	EP 1984-105503	19840515
	EP 128383	B1	19881109		
	R: FR, GB, IT, SE				
	US 4588480	A	19860513	US 1984-612793	19840522
PRAI	DE 1983-3321231		19830611		

AB Ti or Ti alloys are electroplated from a Ni sulfamate bath or electroless-coated from a hypophosphite bath with 5-50.mu.-thick Ni, then heat-treated 30 min-300 h at 400-950.degree. in air or vacuum to form Ti2Ni [12142-89-1] and TiNi3 [12035-74-4] **layers**, followed by **removal** of the remaining top Ni layer or addnl. the TiNi3 layer by etching with HNO3 on a cyanide nitroarom. soln. at 10-60.degree. for 15 min-2 h to increase the erosion and wear resistance and improve the coating adhesion under severe service conditions. For static loading the hard TiNi3 top layer is used, but for dynamic (rotary and/or alternating) loading, the relatively tougher Ti2Ni is left on the surface after etching. The substrate is etched with HNO3-HF solns. and activated in a bath contg. chromic acid, HF, and **H2SiF6**. The Vickers hardness of the .apprx.4.mu.-thick coating on Ti-6Al-4V [12743-70-3] contg. Ni, TiNi3, and Ti2Ni after heat treatment 8 h at 600.degree. was 240, 140, 1000, and 600 for the substrate, Ni, TiN3, and Ti2Ni, resp.

ST titanium cementation nickel wear resistance

IT Etching

(of titanium alloys coated with nickel, followed by cementation heat treatment, for wear resistance)

IT Cementation
(of titanium, with nickel for wear resistance)

IT Coating process
(electroless, of titanium, with nickel, followed by cementation heat treatment, for wear resistance)

IT Titanium alloy, base
RL: RCT (Reactant); RACT (Reactant or reagent)
(cementation of, with nickel for wear resistance)

IT 7440-32-6, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(cementation of, with nickel for wear resistance)

IT 12743-70-3
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(coating of, with nickel followed by diffusion heat treatment for wear resistance)

IT 12035-74-4 12142-89-1
RL: USES (Uses)
(coating with, of titanium for wear resistance)

IT 7440-02-0, uses and miscellaneous
RL: USES (Uses)
(electroplating with, of titanium alloys followed by diffusion heat treatment for wear resistance)

IT 7664-39-3, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(etching by nitric acid contg., of titanium coated with nickel for cementation, for wear resistance)

IT 7697-37-2, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(etching by, of nickel-coated titanium after cementation, for wear resistance)

L60 ANSWER 54 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 1985:11119 HCAPLUS

DN 102:11119

TI Etching apparatus

PA Fujitsu Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 3 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC C23F001-08; H01L021-306

CC 56-6 (Nonferrous **Metals** and Alloys)

Section cross-reference(s): 47

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 59166675	A2	19840920	JP 1983-40902	19830311
PRAI	JP 1983-40902		19830311		

AB An SiO₂ film on a Si substrate is etched uniformly in an app. comprising a HF(g) generator connected by a pipe to a chamber contg. a rotating disk. The substrate on the disk is exposed to HF(g) fed toward the center of the disk for uniform exposure.

ST silicon **dioxide film etching** app; hydrogen fluoride silicon **dioxide etching**

IT **Etching**
(of silicon **dioxide films**, with hydrogen fluoride, app. for)

IT **7631-86-9**, reactions

RL: **RCT (Reactant)**; RACT (Reactant or reagent)
(etching of films of, with hydrogen fluoride, app.
for)

IT 7664-39-3, reactions

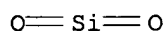
RL: **RCT (Reactant)**; RACT (Reactant or reagent)
(etching with, of silicon dioxide films, app. for)

IT 7631-86-9, reactions

RL: **RCT (Reactant)**; RACT (Reactant or reagent)
(etching of films of, with hydrogen fluoride, app.
for)

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 7664-39-3, reactions

RL: **RCT (Reactant)**; RACT (Reactant or reagent)
(etching with, of silicon dioxide films, app. for)

RN 7664-39-3 HCAPLUS

CN Hydrofluoric acid (8CI, 9CI) (CA INDEX NAME)

HF

L60 ANSWER 55 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 1984:634429 HCAPLUS

DN 101:234429

TI Detecting structure inhomogeneities in titanium alloy samples and welded parts

IN Thoma, Martin

PA Motoren- und Turbinen-Union Muenchen G.m.b.H., Fed. Rep. Ger.

SO Eur. Pat. Appl., 9 pp.

CODEN: EPXXDW

DT Patent

LA German

IC C23F001-00; G01N001-32

CC 56-8 (**Nonferrous Metals** and Alloys)

FAN.CNT 1

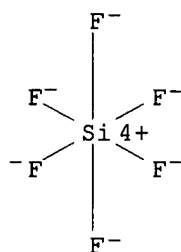
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 120340	A1	19841003	EP 1984-102201	19840301
	EP 120340	B1	19861112		
	R: AT, BE, CH, DE, FR, GB, IT, LI, NL, SE				
	US 4551434	A	19851105	US 1984-582253	19840222
	AT 23576	E	19861115	AT 1984-102201	19840301
PRAI	DE 1983-3309448		19830316		
	EP 1984-102201		19840301		

AB An etching bath of 40-80.degree., for improved contrast of .alpha.- and .beta.-phase, grain boundaries, segregations of a phase or impurities (O- and N segregations) in Ti alloys and their welds, contains CrO3, HF, and/or **H2SiF6** and As, Sb, or Si compd. at mol ratios F/As(Sb,Si) 5-8, and Cr/As(Sb,Si) 3-6 at As,Sb, or Si 0.1-2 mol/L optionally **H2SiF6** is replaced by Sb2O3, SbF3, or AsO3 at the above mol. ratio and concn. The specimen is vapor-phase degreased (trichloroethene)

blasted with 270 mesh Al₂O₃ abrasive at 4-5 bar, the surface is preetched 2-20 min with HNO₃-HF soln., esp. 400 HNO₃ and 5 g HF/L, and rinsed prior to etching for metallog., and rinsed again, and dried. Thus, the specimen surface, after the above pretreatment, was finish-etched in a CrO₃/H₂SiF₆/HF soln. at mol ratio 1.8/10.6/0.3, water rinsed, and dried. The **layer** thickness, **removed** by 15-min etching in HNO₃-HF soln. was 2-4 and in CrO₃-HF-H₂SiF₆ .apprx.2 .mu..

Welded specimens were wet-blasted with 240-mesh abrasive, pre-etched 10 min in HNO₃ 400 and HF 5 g/L, washed 0.25 min each at 20.degree., finish-etched 5-15 min in CrO₃-HF-H₂SiF₆ at mol ratio 3:0.6:1.2 and 60.degree., water washed at 20.degree., and dried by compressed air.

ST titanium weld structure etching bath; metallog titanium alloy weld
 IT Welds
 (titanium alloy, etching bath for, for metallog.)
 IT Etching
 (selective, of titanium alloys and welds, for metallog., baths for)
 IT Titanium alloy, base
 RL: PRP (Properties)
 (structure of, etching bath for metallog. of)
 IT 7697-37-2, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (etching in bath contg., of titanium alloys for metallog.)
 IT 7664-39-3, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (etching in nitric acid bath contg., of titanium alloys for metallog.)
 IT 7783-56-4 **16961-83-4**
 RL: USES (Uses)
 (finish etching in bath contg., of titanium alloys for metallog.)
 IT 1309-64-4, reactions 1327-53-3 1333-82-0
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (finish etching in bath contg., of titanium alloys for metallog.)
 IT **16961-83-4**
 RL: USES (Uses)
 (finish etching in bath contg., of titanium alloys for metallog.)
 RN 16961-83-4 HCAPLUS
 CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



2 H⁺

L60 ANSWER 56 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 1981:70104 HCAPLUS
 DN 94:70104
 TI Surface treatment of metals

IN Oppen, Dieter; Lampatzner, Karl
 PA Metallgesellschaft A.-G., Fed. Rep. Ger.
 SO Ger. Offen., 13 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 IC C23F007-08; B05D003-10; B05D007-16
 CC 56-5 (**Nonferrous Metals** and Alloys)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2905535	A1	19800904	DE 1979-2905535	19790214
	EP 15020	A1	19800903	EP 1980-200096	19800205
	EP 15020	B1	19830223		
	EP 15020	B2	19860205		
	R: BE, DE, FR, SE				
	GB 2041987	A	19800917	GB 1980-4613	19800212
	GB 2041987	B2	19830727		
	CA 1133362	A1	19821012	CA 1980-345534	19800212
	JP 55131176	A2	19801011	JP 1980-17162	19800214
	JP 59031593	B4	19840802		
	US 4264378	A	19810428	US 1980-121569	19800214
PRAI	DE 1979-2905535		19790214		

AB The degreased Al surface is phosphated in an Al, Zn, Mg, Mn, Co, or Ni phosphate soln. for coating with a vinyl resin or epoxy-phenolic resin lacquer. The phosphating soln. contains also: (1) MoO42-, WO42-, or VO3-; (2) HBF4 [16872-11-0], **H2TiF6** [17439-11-1], H2ZrF6 [12021-95-3], or **H2SiF6** [16961-83-4]; (3) SiO2; and (4) glucose [50-99-7], ascorbic acid [50-81-7], hydrazine [302-01-2], Na hypophosphite [7681-53-0], NH2OH, or MeCHO [75-07-0] as a reducing agent. Thus, an Al strip was degreased in an aq. soln. contg. 5g H2SO4/L, 0.5 g ethoxylated alkylphenol/L, and 0.05 g HF/L, followed by phosphating with a soln. contg. PO43- 20, Zn 6.5, VO3- 1.06, **H2TiF6** 1.6, ascorbic acid 5, and SiO2 1.2 g/L. The Al strip was dried at 80.degree. to obtain a 124 mg/m2 phosphate **layer** and the phosphated **strip** was coated with a vinyl resin or epoxy-phenolic resin lacquer of high adhesive strength and corrosion resistance.

ST aluminum coating phosphate lacquer

IT Molybdates

Tungstates

Vanadates

RL: USES (Uses)

(aluminum coating with phosphates from bath contg.)

IT Coating process

(of aluminum, with phosphates and lacquers)

IT 50-81-7, uses and miscellaneous 50-99-7, uses and miscellaneous
 75-07-0, uses and miscellaneous 302-01-2, uses and miscellaneous
 7631-86-9, uses and miscellaneous 7681-53-0 7803-49-8, uses and
 miscellaneous 10043-83-1 10124-54-6 12021-95-3 13765-93-0
 13847-22-8 14396-43-1 16872-11-0 **16961-83-4** 17409-91-5

17439-11-1

RL: USES (Uses)

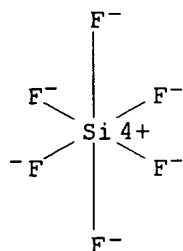
(aluminum coating with phosphates from bath contg.)

IT 108-95-2D, alkyl derivs., ethoxylated 7664-39-3, uses and miscellaneous
 7664-93-9, uses and miscellaneous

RL: USES (Uses)

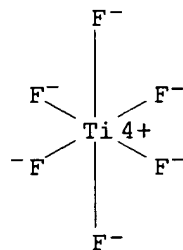
(aluminum degreasing in soln. contg., before coating with phosphates and lacquers)

IT 7429-90-5, uses and miscellaneous
 RL: USES (Uses)
 (coating of, with phosphates and lacquer)
 IT **16961-83-4 17439-11-1**
 RL: USES (Uses)
 (aluminum coating with phosphates from bath contg.)
 RN 16961-83-4 HCAPLUS
 CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



2 H⁺

RN 17439-11-1 HCAPLUS
 CN Titanate(2-), hexafluoro-, dihydrogen, (OC-6-11)- (9CI) (CA INDEX NAME)



2 H⁺

L60 ANSWER 57 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 1978:516559 HCAPLUS
 DN 89:116559
 TI Electroless deposition of metals onto zirconium articles
 IN Donaghy, Robert Erandel
 PA General Electric Co., USA
 SO Ger. Offen., 19 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 IC C23C003-02
 CC 56-5 (Nonferrous Metals and Alloys)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2744254	A1	19780406	DE 1977-2744254	19771001
	DE 2744254	B2	19810806		
	DE 2744254	C3	19820519		
	US 4093756	A	19780606	US 1976-729860	19761004
	SE 7711108	A	19780405	SE 1977-11108	19771004
	FR 2366377	A1	19780428	FR 1977-29752	19771004
	FR 2366377	B1	19820730		
	JP 53062737	A2	19780605	JP 1977-118692	19771004
	JP 56051226	B4	19811203		
	ES 462906	A1	19801201	ES 1977-462906	19771004
	CA 1100434	A1	19810505	CA 1977-288487	19771006
	BE 887585	A7	19810819	BE 1981-203843	19810219
PRAI	US 1976-729860		19761004		
AB	Adherent Cu or Ni coatings are electrolessly deposited on Zr, such as Zircaloy 2 [11068-94-3] tubes, by activating the surface in an acidic bath, followed by removal of the loose layer , then coating. Suitable acidic baths include a mixt. of (NH ₄) ₂ F ₂ 10-20 and H ₂ SO ₄ or HNO ₃ 0.75-2 g/L. Etching is done for .apprx.10 min at 20-30.degree.. The loose layer is removed , after rinsing with deionized H ₂ O, by ultrasound, mech., or by washing with an aq. BF ₃ or H ₂ SiF ₆ soln. Subsequently, an electroless Cu or Ni film of 3-15 .mu. is deposited. Cu coatings are deposited at .apprx.60.degree., Ni at .apprx.95.degree.. The pore-free adherent film is further improved by diffusion annealing at 150-200.degree..				
ST	copper electroless coating zirconium; nickel electroless coating zirconium				
IT	Coating process				
	(electroless, with copper or nickel on zirconium and zirconium alloys)				
IT	7440-67-7, uses and miscellaneous 11068-94-3				
	RL: USES (Uses)				
	(coating of, with copper or nickel)				
IT	7440-02-0, uses and miscellaneous 7440-50-8, uses and miscellaneous				
	RL: USES (Uses)				
	(coating with, on zirconium and zirconium alloys)				

L60 ANSWER 58 OF 65 HCAPLUS COPYRIGHT 2003 ACS
AN 1978:181324 HCAPLUS
DN 88:181324
TI Selective etching of silicone-containing materials
IN Stein, Leonard
PA General Electric Co., USA
SO Ger. Offen., 22 pp.
CODEN: GWXXBX
DT Patent
LA German
IC C23F001-02
CC 76-13 (Electric Phenomena)
Section cross-reference(s): 36

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2739847	A1	19780309	DE 1977-2739847	19770903
	DE 2739847	C2	19850926		
	US 4140572	A	19790220	US 1976-720584	19760907
PRAI	US 1976-720584		19760907		
AB	A layer of hardened silicone-polyimide copolymer is formed on a semiconductor device, a Ti layer is deposited on the copolymer, a pos.				

photoresist layer is formed on the Ti, windows are formed in the photoresist, windows are etched in the Ti by **fluoroboric acid**, and then windows are etched in the copolymer layer by a phenol-contg. soln. The copolymer is a reaction product of a Si-free org. diamine, an org. tetracarboxylic acid dianhydride, and a polysiloxane. Thus, a polymer **precursor** soln. was found by reaction of benzophenonetetracarboxylic acid dianhydride with methylenedianiline and bis(3-aminopropyl)tetramethyldisiloxane, with the last 2 in a mol ratio of 70:30, at <50.degree.. Then 7-10 drops of a soln. of the polymer **precursor** in the form of the polyamic acid dissolved in N-methyl-2-pyrrolidone with 25% solids was placed on a Si wafer contg. many devices and the wafer was spun at 2000-3000 rpm. The coating was hardened .apprx.30 min at 135.degree. in N, 30 min at 185.degree. in N, and .apprx.2 h at 225.degree. in partial vacuum. The hardened layer was 1.5-2 .mu.m thick. A Ti layer .apprx. 1000 .ANG. thick was vapor-deposited on the polymer layer, followed by a layer of pos. photoresist. The photoresist was exposed and developed to form windows, through which the Ti was etched 30-60 s at room temp. in fluoroboric acid. The photoresist **layer** was **dissolved** in Me₂CO and the wafer was rinsed with iso-PrOH and dried. Then the copolymer layer was etched .apprx.2 min at 60.degree. in a phenol-contg. stripping soln. The wafers were immersed in Me₂CO agitated by ultrasound for .apprx.15 s and rinsed with iso-PrOH, and the Ti mask was removed. The exposed Al contact surfaces were not attacked by the etchants, the windows were well defined, and the edges of the copolymer showed no visible undercutting.

- ST siloxane polyimide coating etching; semiconductor siloxane polyimide coating; silicon siloxane polyimide coating
- IT Semiconductor devices
(etching of siloxane polyimide layers on)
- IT Etching
(of siloxane polyimide layers on semiconductor devices)
- IT Siloxanes and Silicones, uses and miscellaneous
(polyimide, etching of layers of, on semiconductor devices)
- IT Polyimides, uses and miscellaneous
(siloxane, etching of layers of, on semiconductor devices)
- IT 7440-21-3, uses and miscellaneous
RL: DEV (Device component use); USES (Uses)
(devices, selective etching of siloxane polyimide layers on)
- IT 62891-63-8
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(etching of layers of, on semiconductor devices)
- L60 ANSWER 59 OF 65 HCAPLUS COPYRIGHT 2003 ACS
- AN 1974:136571 HCAPLUS
- DN 80:136571
- TI Mechanism of the corrosion of titanium and its alloys and development of optimum conditions for protection from corrosion in corrosive media using inhibitors
- AU Brynza, A. P.; Gerasyutina, L. I.; Sotnikova, V. I.; Vinichenko, I. G.; Lobanova, S. N.; Vorotyagina, V. D.; Naprienko, S. P.; Danilova, L. M.; Legashova, T. P.; et al.
- CS USSR
- SO Nekot. Aktual. Vop. Sovrem. Estestvozn. (1971), 168-73. Editor(s): Dontsova, Z. S. Publisher: Dnepropetrovsk. Gos. Univ., Dnepropetrovsk, USSR.
CODEN: 27IQAX
- DT Conference

LA Russian
 CC 56-8 (**Nonferrous Metals** and Alloys)
 AB Electrochem. corrosion and passivation of Ti in aq. acid solns. were studied. Investigate were (1) the mechanism of retardation of electrochem. dissoln. of Ti in aq. solns. of H₂SO₄, HCl, H₃PO₄, **H₂SiF₆** and their mixts. at 20-80.degree. by anodic polarization by an external current and by addn. of org. inhibitors of the oxidizing and adsorbing type (2) corrosion of porous sintered Ti in aq. H₂SO₄, HCl, HNO₃ and some chloride solns. (3) corrosion resistance and electrochem. behavior of Ti-O (.ltoreq. 33 at. % O) system as well as of the Ti-N, Zr-N, Hf-N, Ti-C, Zr-C, and Hf-C systems in the region of homogeneity in solns. of acids contg. H₂O₂. The stabilities of carbide and nitride coatings on Ti in acid solns. contg. oxidizing media were also studied. A method for electrochem. pickling of Ti for removal of scale is described.
 ST titanium corrosion mechanism prevention; passivation titanium aq acid; pickling titanium scale removal; carbide coating titanium corrosion; nitride coating titanium corrosion
 IT Pickling
 (electrochem., of titanium)
 IT Corrosion inhibitors
 (for titanium and titanium alloys)
 IT Scale (**coating**)
 (**removal** of, from titanium by electrochem. pickling)
 IT Titanium alloy, base
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (corrosion of, coatings and inhibitors for prevention of)
 IT 7440-32-6, reactions
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (corrosion of, coatings and inhibitors for prevention of)
 IT 39428-69-8 52359-82-7 52359-98-5 52360-07-3 52360-47-1
 52360-50-6 52360-51-7
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (corrosion of, inhibitors for)

L60 ANSWER 60 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 1974:4052 HCAPLUS
 DN 80:4052
 TI Pure poly(alkylene ethers)
 IN Lengsfeld, Wolfgang
 PA Badische Anilin- und Soda-Fabrik A.-G.
 SO Ger. Offen., 11 pp.
 CODEN: GWXXBX

DT Patent

LA German

IC C08G

CC 35-3 (Synthetic High Polymers)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2204515	A1	19730809	DE 1972-2204515	19720201
PRAI	DE 1972-2204515		19720201		

AB Pure polyethylenepolypropylene glycol glycerol triether (I) [9082-00-2] or a similar compd. was prepd. by polymn. over potassium hydroxide [1310-58-3] or sodium hydroxide [1310-73-2] with susequent binding of the catalyst by hexafluorosilicic acid (II) [**16961-83-4**]. Thus, a 933:5000 parts ethylene oxide-propylene oxide mixt. was added to glycerol 92.1, H₂O 12, and KOH 13.1 parts within 15 hr at 115.deg. and 3.5 atm gage to give crude I of OH no. 41 and KOH content 0.22%. Crude I (150 parts)

and 4.5 parts H₂O were heated 30 min at 100.deg., the mixt. neutralized with 30% II (d. 1.32 g/ml), kept 1 hr at 100.deg., and filtered to give I of base no. <0.02, Na⁺ content <0.5 ppm, and K⁺ content 3 ppm.

ST polyalkylene ether manuf purity; fluorosilicic acid polyether purifn; catalyst removal polyether

IT Polymerization catalysts
(alk. **metal hydroxides, removal** of residual, from polyethers)

IT Polyoxyalkylenes
RL: IMF (Industrial manufacture); PREP (Preparation)
(manuf. of, alk. catalyst **removal** in, fluosilicic acid for)

IT **16961-83-4**
RL: USES (Uses)
(alk. catalysts **removal** by, in polyether manuf.)

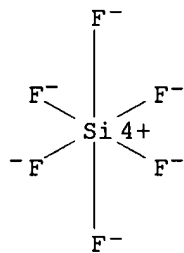
IT 1310-58-3, uses and miscellaneous 1310-73-2, uses and miscellaneous
RL: CAT (Catalyst use); USES (Uses)
(catalysts, **removal** of residual, from polyethers)

IT 9008-81-5P 25765-36-0P 26062-52-2P
RL: IMF (Industrial manufacture); PREP (Preparation)
(manuf. of, alk. catalysts **removal** in, fluosilicic acid for)

IT **16961-83-4**
RL: USES (Uses)
(alk. catalysts **removal** by, in polyether manuf.)

RN 16961-83-4 HCAPLUS

CN Silicate(2-), hexafluoro-, dihydrogen (8CI, 9CI) (CA INDEX NAME)



2 H⁺

L60 ANSWER 61 OF 65 HCAPLUS COPYRIGHT 2003 ACS
AN 1972:566810 HCAPLUS
DN 77:166810
TI Purification of fluorine-containing solutions
IN Kadotani, In; Isobe, Seishiro; Shiraki, Yoshiro
PA Central Glass Co., Ltd.
SO Jpn. Tokkyo Koho, 6 pp.
CODEN: JAXXAD
DT Patent
LA Japanese
IC C01D; C01C
CC 49-10 (Industrial Inorganic Chemicals)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 47002417 B4 19720122 JP 1968-68370 19680922
 AB The F-contg. solns., obtained by the decompn. of **H₂SiF₆** or alkali fluoro-silicate, such as (NH₄)₂SiF₆ and Na₂SiF₆, with NH₄OH or alkali solns. are purified by adding milk of lime or a sol. Ca compd. such as CaCl₂, or a mixt. of these. Thus, the P₂O₅ content of an NaSiF₆ soln. contg. 0.061% P₂O₅ became 0.00035% after a treatment with 2.0 vol. % milk of lime contg. 150 g CaO/l.
 ST phosphate removal fluoride soln
 IT 1305-62-0 1305-78-8, uses and miscellaneous
 RL: USES (Uses)
 (in phosphorus **oxide removal**, from sodium hexafluoro-silicate)
 IT 16893-85-9P
 RL: PREP (Preparation)
 (phosphorus **oxide removal** from, by calcium hydride-calcium oxide solns.)
 IT 1314-56-3
 RL: **REM (Removal or disposal)**; PROC (Process)
 (**removal** of, from sodium hexafluoro-silicate by calcium hydride-calcium oxide solns.)

L60 ANSWER 62 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 1972:437854 HCAPLUS
 DN 77:37854
 TI **Dissolution of oxides** and scale formed on alloy steels in etching solutions
 AU Maksimenko, M. N.; Podobaev, N. I.
 CS Mosk. Gos. Pedagog. Inst. im. Lenina, Moscow, USSR
 SO Uchenye Zapiski, Moskovskii Gosudarstvennyi Pedagogicheskii Institut (1969), No. 303, 144-50
 CODEN: UMPLA6; ISSN: 0372-4387
 DT Journal
 LA Russian
 CC 55-6 (Ferrous **Metals** and Alloys)
 AB The dissoln. of scale on the steels 12Kh1MF, Kh8, and EI756 which contain 1, 8, and 13% Cr, resp., was studied along with that of FeO, Fe₂O₃, Fe₃O₄, NiO, and TiO₂ in solns. of HNO₃, HCl, H₂SO₄, and HF of various strengths as well as in various acid mixts. The effects of various additives, such as acetylacetone, urea, thiourea, and hexamethylenetetramine, were studied. The scales and oxides are practically insol. in HNO₃ except for NiO and the scale on steel 12Kh1MF. The dissoln. of all scales and the Fe oxides in HNO₃ solns. is promoted by HF and Cl⁻; SO₄-promote only the **dissoln.** of Fe **oxides**. The dissoln. rate depends on the surface activity of the anions and their tendency toward complex formation. Thiourea stimulates the **dissoln.** of the **oxides** and scales.
 ST scale alloy steel dissoln; **oxide** alloy steel **dissoln**; chromium steel scale removal; acid scale removal steel; steel chromium scale removal; nitric acid steel descaling; acetylacetone steel descaling; urea steel descaling; thiourea steel descaling; hexamethylenetetramine steel descaling
 IT Solution rate
 (of oxides and scale on steel, effect of corrosion inhibitors on)
 IT Pickling
 (of steel, corrosion inhibitor effect on solution rate of oxides and scale in)
 IT Scale (**coating**)
 (**removal** of, from steel, corrosion inhibitors in)

IT 14808-79-8 16887-00-6
 RL: USES (Uses)
 (soln. of oxides and scale from steel in nitric acid contg.)

IT 7664-39-3, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (soln. of oxides and scale from steel in nitric acid contg.)

IT 57-13-6, reactions 62-56-6, reactions 100-97-0, reactions 123-54-6, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (soln. of oxides and scale in acid solns. contg.)

IT 1308-38-9, reactions 1309-37-1, reactions 1313-99-1, reactions 1317-61-9 1345-25-1, reactions 13463-67-7, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (soln. of, in pickling of steel, effect of corrosion inhibitors on)

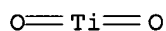
IT 7664-39-3, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (soln. of oxides and scale from steel in nitric acid contg.)

RN 7664-39-3 HCAPLUS
 CN Hydrofluoric acid (8CI, 9CI) (CA INDEX NAME)

HF

IT 13463-67-7, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (soln. of, in pickling of steel, effect of corrosion inhibitors on)

RN 13463-67-7 HCAPLUS
 CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)



L60 ANSWER 63 OF 65 HCAPLUS COPYRIGHT 2003 ACS
 AN 1967:475522 HCAPLUS
 DN 67:75522
 TI Removing iron, alumina, and silica from manganese dioxide ores by leaching
 IN Welsh, Jay Y.
 PA Manganese Chemicals Corp.
 SO U.S., 5 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 NCL 075101000
 CC 54 (Extractive Metallurgy)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3330649		19670711	US	19640527
AB	High-grade ore ground through 100 mesh, in which most of the Mn is present as MnO ₂ , is up-graded, often to "battery grade oxide," by treatment at .apprx.90.degree. for 30-50 min. in a stirred reactor as a slurry contg. 25-30% solids by wt. in an aq. soln. contg. .apprx.10% HF and 10-15% H ₂ SiF ₆ by wt. The reacted batch is settled in a thickener, and the soln. is partly recycled to the reactor, and partly treated in a concg. still; the MnO ₂ of the ore, which is insol. in this acid soln., is				

washed in a series of .apprx.6 countercurrent thickeners, and finally filtered and dried. In the still the wash H₂O and acid salt soln. from the thickner are boiled with concd. H₂SO₄ at .apprx.165.degree., the vapor passing through 2 condensers in series, for collecting F-bearing acids which are passed partly back to the reactor and partly to a sep. neutralizing vessel where **H₂SiF₆** is made from them with SiO₂ addns. Excess steam is allowed to escape at the top of the upper condenser above the still, and care is taken to maintain a correct "water balance" in the system by correlating the amt. of wash water used with its removal from the still. In the bottom of the still sulfates of Mn, Fe, and Al are formed by reaction of 70% H₂SO₄ with the fluoride and silicofluoride salts derived from the impure ore in the reactor, and if desired the sulfates can be sepd. as crystals or sludge from this acid for recovery of these metals. In the use of this process for treating a Brazilian ore contg. Mn 51 with MnO₂ 72, Al₂O₃ 5.3, Fe 3.9, and SiO₂ 1.37, with recycling of the HF-**H₂SiF₆** acid reagent as described, a product contg. Mn 58 with MnO₂ 87, Al₂O₃ 1.32, Fe 0.73, and SiO₂ 0.07% was obtained. About 2 lb. wash water/lb. ore was used, 10-20% of it being lost from the cycle system as a 30% **H₂SiF₆** soln. by-product, and somewhat less in the sulfate sludge; therefore .apprx.1.5 lb. H₂O/lb. ore had to be volatilized from the still.

ST IRON REMOVAL MN ORES; LEACHING MN ORES; MANGANESE ORES LEACHING; ALUMINA REMOVAL MN ORES; SILICA REMOVAL MN ORES

IT Manganese ores

RL: RCT (Reactant); RACT (Reactant or reagent)
(leaching of, with hydrofluoric acid and fluorosilicic acid, for **removal** of aluminum oxide, iron and silica)

IT 1344-28-1, uses and miscellaneous 7439-89-6, uses and miscellaneous
7631-86-9, uses and miscellaneous

RL: REM (Removal or disposal); PROC (Process)
(**removal** of, from manganese oxide (MnO₂)-contg. ores by leaching)

L60 ANSWER 64 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 1964:81381 HCAPLUS

DN 60:81381

OREF 60:14220f-h,14221a

TI Cleaning and polishing aluminum and its alloys

IN Kendall, Earl W.

PA Rohr Corp.

SO 9 pp.

DT Patent

LA Unavailable

NCL 156021000

CC 20 (**Nonferrous Metals** and Alloys)

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3106499		19631008	US	19590511

PI US 3106499 19631008 US 19590511

AB A mirror-like finish is obtained on Al contg. not more than 5-6% of alloyed elements, by treatment in dil. aq. solns. of, essentially, NH₄F.HF, HNO₃, and H₃BO₃ at 160-190.degree.F. for 5-10 min. There is negligible attack, and the treated surface is clean and free of all metallic oxides. It is receptive to chem. conversion coatings, anodic films, and to spot and fusion welds without welding flux. The solns. can also be used to **remove** conversion coatings. A ratio of about 10:1 is maintained between the HNO₃ and the NH₄F.HF. Boric acid can vary from 2 to 50 parts to 1 part of NH₄F.HF, by wt. Thus, a liquid concentrate or a dry mix can be prepd. from HF, HBF₄, and **H₂SiF₆**

or their water-sol. salts and H₃BO₃ or its water-sol. salts and be combined with HNO₃ and water. It should contain 0.2-0.5% NH₄F.HF, 1.0-10.0% H₃BO₃, and 12.0-25.0% of 16-20% HNO₃. A concd. soln., including the HNO₃ and 10% of the water, can be prepd. For example, NH₄F.HF 0.2 g., H₃BO₃ 1.0 g., HNO₃ 2 ml., and H₂O 10 ml. is dild. to 100 ml. of soln. for use. A preferred dry mix comprises 1 part by wt. of alkali metal fluoride, calcd. as NH₄F.HF, and 5 parts by wt. of H₃BO₃. This is preferably dissolved in the required amt. of water, and the HNO₃ is added last. A 2-constituent acid compn. is prepd. by adding HNO₃ and HBF₄ or its water-sol. salts to water. Thus, 2024 T3, 7075 T6, 3003-O, 6061 T6, 2024 T6, 2024 T81, and 5052-O Al specimens were cleaned in cold alk. soln. and treated by immersion in solns. of the invention for 10 min. at 170.degree.F. There was negligible redn. in gage in each case. Gloss varied with the alloy. Likewise, welded joints of 6061 alloy, treated by immersion in the optimum soln., then welded by the Heliarc process, left no evidence of porosity. Parts treated as above, then coated with Alodine 1000, could be stored up to 30 days without increasing surface resistance over 25 .mu.ohms and then could be spot welded without **removal** of the Alodine **coating**.

- IT Welds
(aluminum-Mg alloy, cleaning and polishing baths for)
- IT Polishing
(of aluminum, baths for)
- IT Boric acid
(cleaning and polishing baths contg., for Al and Al alloys)
- IT Aluminum alloys, chromium-Zr-
Copper alloys, Al-Mg-Zn-
Copper alloys, aluminum-Mg-
Magnesium alloys, Al-Cu-
Magnesium alloys, Al-Cu-Zn
Magnesium alloys, aluminum-
(cleaning and polishing of, bath for)
- IT Manganese alloy, aluminum-
Zinc alloys, aluminum-Cu-Mg-
(cleaning and polishing of, baths for)
- IT 1341-49-7, Ammonium fluoride, NH₄HF₂ 7697-37-2, Nitric acid
(cleaning and polishing baths contg., for Al and Al alloys)
- IT 7429-90-5, Aluminum
(cleaning and polishing of, bath for)

L60 ANSWER 65 OF 65 HCAPLUS COPYRIGHT 2003 ACS

AN 1962:72328 HCAPLUS

DN 56:72328

OREF 56:13910i,13911a-b

TI Chemical surface treatment of titanium

AU Pray, H. A.; Miller, P. D.; Jefferys, Richard A.

CS Battelle Mem. Inst., Columbus, OH

SO U.S. Dept. Com., Office Tech. Serv., PB Rept. (1961), 147,158, 30 pp.

DT Journal

LA Unavailable

CC 21 (**Nonferrous Metals and Alloys**)

AB A 5% NaOH anodic bath, a fluoride-phosphate and a fluoride-borate immersion bath, resp., are used to produce adherent, continuous coatings on Ti and its alloys. Specimens are pretreated first in a hot Na metasilicate degrease, rinsed in water, and immersed in a typical acid pickle soln. of 900 ml. 1:1 HNO₃ and H₂O/1., 100 g. NH₄F-HF/1., and 100 ml. H₂SiF₆/1. to **remove** scale or **oxide** **film**. For Ti alloys the c.d. and time are increased as compared

to unalloyed Ti. The coatings greatly minimized the severe galling tendencies of Ti.

- IT Fluorides
(coating with borates, phosphates and, on Ti and Ti alloys)
- IT Borates
(coating with fluorides and, on Ti and Ti alloys)
- IT Coating(s)
(of titanium and Ti alloys, in anodic NaOH bath, borate-fluoride and fluoride-phosphate solns.)
- IT Metals
(uniting of, by diffusion)
- IT Titanium alloys
(coating of, in borate-fluoride, fluoride-phosphate and NaOH anodic solns.)
- IT 7440-32-6, Titanium
(coating (anodic, oxide, etc.) of, in NaOH, borate-fluoride and fluoride-phosphate solns.)
- IT 1310-73-2, Sodium hydroxide
(coating of, anodic, in Ti and Ti alloys)

=> D QUE

- L3 14 SEA FILE=REGISTRY ABB=ON (10034-85-2/BI OR 10035-10-6/BI OR 12021-95-3/BI OR 13598-36-2/BI OR 16950-43-9/BI OR 16961-83-4/BI OR 17439-11-1/BI OR 6303-21-5/BI OR 64-19-7/BI OR 7601-90-3/BI OR 7647-01-0/BI OR 7664-38-2/BI OR 7664-93-9/BI OR 7697-37-2/BI)
- L4 3 SEA FILE=REGISTRY ABB=ON L3 AND (1/TI OR 1/SI OR 1/GE)
- L6 197 SEA FILE=REGISTRY ABB=ON (H(L) (SI OR GE OR TI OR GA) (L) F)/ELS (L) 3/ELC.SUB
- L8 1 SEA FILE=REGISTRY ABB=ON "HYDROGEN FLUORIDE"/CN
- L9 1 SEA FILE=REGISTRY ABB=ON "SILICON DIOXIDE"/CN
- L10 2 SEA FILE=REGISTRY ABB=ON "GERMANIUM OXIDE"/CN
- L11 2 SEA FILE=REGISTRY ABB=ON "TITANIUM OXIDE"/CN
- L12 2 SEA FILE=REGISTRY ABB=ON "GALLIUM OXIDE"/CN
- L14 197 SEA FILE=REGISTRY ABB=ON L6 OR L4
- L15 3095 SEA FILE=HCAPLUS ABB=ON L14
- L17 254 SEA FILE=HCAPLUS ABB=ON L15 AND ?OXIDE? AND (REMOV? OR DISSOL? OR CLEAN? OR ETHCH? OR STRIP? OR ELIMIN? OR PICKL?)
- L18 138366 SEA FILE=HCAPLUS ABB=ON OXIDES/IT
- L19 3150 SEA FILE=HCAPLUS ABB=ON L18(L) REM/RL
- L20 2 SEA FILE=HCAPLUS ABB=ON L17 AND L19
- L22 76 SEA FILE=HCAPLUS ABB=ON L15 AND ?OXIDE?(5A) (REMOV? OR DISSOL? OR CLEAN? OR ETHCH? OR STRIP? OR ELIMIN? OR PICKL?)
- L23 31 SEA FILE=HCAPLUS ABB=ON L22 AND (SUBSTRATE? OR METAL? OR TURBINE? OR AIRFOIL?)
- L24 2 SEA FILE=HCAPLUS ABB=ON L15 AND L19
- L25 4829 SEA FILE=HCAPLUS ABB=ON L15 OR H2SIF6 OR H2GEF6 OR H2TIF6 OR H2GAF6 OR FLUORO?(2A) ACID#(2A) (SILICON OR TITANIUM OR GERMANIUM OR GALLIUM OR TI OR SI OR GE OR GA)
- L26 117 SEA FILE=HCAPLUS ABB=ON L25 AND (OXIDE? OR COATING# OR FILM# OR LAYER#) (3A) (REMOV? OR DISSOL? OR CLEAN? OR ETHCH? OR STRIP? OR PICKL?)
- L27 3 SEA FILE=HCAPLUS ABB=ON L19 AND L26
- L28 26 SEA FILE=HCAPLUS ABB=ON L26 AND NONFERROUS METALS/SC, SX
- L29 13 SEA FILE=HCAPLUS ABB=ON L26 AND REM/RL
- L30 2 SEA FILE=HCAPLUS ABB=ON L23 AND REM/RL
- L31 62 SEA FILE=HCAPLUS ABB=ON L20 OR L23 OR L24 OR (L27 OR L28 OR

L29 OR L30)

L32	13	SEA FILE=HCAPLUS ABB=ON	L31 AND REM/RL
L34	33	SEA FILE=HCAPLUS ABB=ON	L31 AND METAL?/SC, SX
L36	25	SEA FILE=HCAPLUS ABB=ON	L31 AND REMOV?/IT
L37	48	SEA FILE=HCAPLUS ABB=ON	L32 OR L34 OR L36
L39	33025	SEA FILE=HCAPLUS ABB=ON	L8
L40	360136	SEA FILE=HCAPLUS ABB=ON	(L9 OR L10 OR L11 OR L12)
L42	6533	SEA FILE=HCAPLUS ABB=ON	L39(L) RCT/RL
L43	14472	SEA FILE=HCAPLUS ABB=ON	L40(L) RCT/RL
L44	309	SEA FILE=HCAPLUS ABB=ON	L42 AND L43
L45	122	SEA FILE=HCAPLUS ABB=ON	L44 AND (?OXIDE? OR COATING# OR FILM# OR LAYER#) (3A) (REMOV? OR DISSOL? OR CLEAN? OR ETCH? OR STRIP? OR ELIMIN? OR PICKL?)
L46	41	SEA FILE=HCAPLUS ABB=ON	L45 AND (SUBSTRATE? OR METAL? OR TURBINE# OR AIRFOIL?)
L47	0	SEA FILE=HCAPLUS ABB=ON	L46 AND PRECURSOR?
L48	0	SEA FILE=HCAPLUS ABB=ON	L45 AND PRECURSOR?
L49	1	SEA FILE=HCAPLUS ABB=ON	L26 AND PRECURSOR?
L51	5	SEA FILE=HCAPLUS ABB=ON	L46 AND (REM/RL OR REMOV?/IT)
L52	3	SEA FILE=HCAPLUS ABB=ON	L45 AND METAL?/SC, SX
L53	3725	SEA FILE=HCAPLUS ABB=ON	L39 AND L40
L54	122	SEA FILE=HCAPLUS ABB=ON	L53 AND PRECURSOR?
L55	49	SEA FILE=HCAPLUS ABB=ON	L54 AND (?OXIDE? OR COATING# OR FILM# OR LAYER#) (3A) (REMOV? OR DISSOL? OR CLEAN? OR ETCH? OR STRIP? OR ELIMIN? OR PICKL?)
L56	1	SEA FILE=HCAPLUS ABB=ON	L19 AND L55
L58	352	SEA FILE=HCAPLUS ABB=ON	L19(L) INORGANIC
L59	10	SEA FILE=HCAPLUS ABB=ON	L53 AND L58
L60	65	SEA FILE=HCAPLUS ABB=ON	L37 OR (L47 OR L48 OR L49) OR L51 OR L52 OR L56 OR L59
L61	10	SEA FILE=REGISTRY ABB=ON	PHOSPHORIC ACID/CN OR NITRIC ACID/CN OR SULFURIC ACID/CN OR HYDROCHLORIC ACID/CN OR HYDROBROMIC ACID/CN OR ACETIC ACID/CN OR PERCHLORIC ACID/CN OR PHOSPHOROUS ACID/CN OR PHOSPHINIC ACID/CN
L62	11	SEA FILE=REGISTRY ABB=ON	L61 OR L8
L63	308929	SEA FILE=HCAPLUS ABB=ON	L62
L64	52	SEA FILE=HCAPLUS ABB=ON	L26 AND L63
L65	2	SEA FILE=HCAPLUS ABB=ON	L64 AND COMPOSITION?
L66	1176307	SEA FILE=HCAPLUS ABB=ON	L63 OR ALKYL SULFONIC ACID# OR H2PO4 OR HNO3 OR H2SO4 OR HCL OR HF OR HBR OR HCL04 OR H2PO3
L67	74	SEA FILE=HCAPLUS ABB=ON	L26 AND L66
L68	4	SEA FILE=HCAPLUS ABB=ON	L67 AND COMPOSITION?
L69	2	SEA FILE=HCAPLUS ABB=ON	L26 AND ADDITIONAL(1A)ACID#
L70	6	SEA FILE=HCAPLUS ABB=ON	L65 OR L68 OR L69
L71	67	SEA FILE=HCAPLUS ABB=ON	L60 OR L70
L72	2	SEA FILE=HCAPLUS ABB=ON	L71 NOT L60

*addition
acid*

only 2 more references

=> D L72 ALL HITSTR 1-2

L72 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2003 ACS

AN 1965:420296 HCAPLUS

DN 63:20296

OREF 63:3609d-g

TI Scheme of analysis of substances of complex **composition** with determination of aluminum, beryllium, barium, strontium, calcium, magnesium, lead, and fluorine

AU Tserkovnitskaya, I. A.; Borovaya, N. S.; Bakhvalova, M. N.

- SO Metody Kolichestv. Opred. Elementov. Leningr. Gos. Univ. (1964) 84-7
 DT Journal
 LA Russian
 CC 2 (Analytical Chemistry)
 AB The indirect method of detg. Ca and Sr consists in pptg. them, after sepn. of the Ba, as the oxalates, calcining to const. wt., **dissolving** the resulting **oxides** in dil. **HCl**, and detg. the Sr + Ca by complexometric titrn. The Pb, Al, Be, Ba, Sr, and Ca are detd. successively in aliquots of the soln. obtained after treatment of a known wt. of the sample with concd. **HNO3** to remove F-. The Pb is first sepd. electrolytically on a Pt gauze anode. The PbO2 is dissolved in dil. **HNO3** in the presence of H2O2 and detd. by complexometric titrn. with the indicator Eriochrome Black T. From the soln. remaining from the electrolysis, Al(OH)3 + Be(OH)2 is pptd. with a CO2-free 5% NH3 soln. After repptn., the hydroxides are dissolved, the Al and Be are sepd. by the quinolinolate method, and the ppt. is weighed as Al(C9H6ON)3. After destruction of the excess quinolinolate with **HNO3** the Be is pptd. as Be(OH)2 with 5% CO2-free NH3 soln. From the combined filtrates after sepn. of the Al(OH)3 and Be(OH)2, ppt. BaCrO4, dissolve it in 0.1M **HClO4**, and det. the Ba amperometrically. The H2CrO4 is titrated with Mohr's salt soln. at 1 v. (S.C.E.) by using a Pt microelectrode. After sepn. of the Ba from the combined solns., ppt. the oxalates of Sr and Ca, in the presence of Trilon B, with a satd. soln. of (NH4)2C2O4. After calcination, weigh the residue of CaO + SrO, dissolve it in 1:1 **HCl**, and titrate with 0.05N Trilon B soln. in the presence of Acid Chrome Dark Blue indicator. To another aliquot of the soln., add 5% NH3 soln., filter off the ppt. of hydroxides, ppt. the BaSO4 + SrSO4 + CaSO4 with 1:1 **H2SO4** soln. in the presence of a 2-fold vol. of alc., and det. the Mg complexometrically by titrn. in presence of Acid Chrome Dark Blue. The F is detd. on a sep. sample by distg. it off as **H2SiF6**, pptg. the F- in ammoniacal soln. with excess CaCl2, and back titrating the latter with Complexon III in the presence of Acid Chrome Dark Blue.
- IT 7429-90-5, Aluminum 7439-89-6, Iron 7439-92-1, Lead 7439-96-5, Manganese 7440-02-0, Nickel 7440-31-5, Tin 7440-32-6, Titanium 7440-36-0, Antimony 7440-42-8, Boron 7440-47-3, Chromium 7440-50-8, Copper
 (analysis, detn. in SiC)
- IT 7439-95-4, Magnesium
 (analysis, in polyesters, in SiC)
- IT 7429-90-5, Aluminum 7439-92-1, Lead 7439-95-4, Magnesium 7440-24-6, Strontium 7440-41-7, Beryllium 7440-70-2, Calcium 7782-41-4, Fluorine
 (analysis, sepn. and detn.)
- IT 7440-39-3, Barium
 (sepn. and detn.)
- L72 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2003 ACS
 AN 1955:4298 HCAPLUS
 DN 49:4298
 OREF 49:818f-i
 TI Surface treatment and finishing of light metals. V. Chemical conversion coatings
 AU Wernick, S.; Pinner, R.
 SO Metal Finishing (1954), 52(No. 10;No. 11), 68-73;83-7
 DT Journal
 LA Unavailable
 CC 9 (Metallurgy and Metallography)

AB While the oxide conversion coat can be used without further treatment, in the main its function is to act as an undercoating and a base for org. finishes. It is normally considerably thinner than the oxide film produced by anodizing and for most protective applications the conversion coatings are, therefore, hardly competitive with anodic finishes. The main attraction of finishes obtained by chem. conversion is the economy and speed with which they can be produced. When Al is immersed in boiling H₂O, the natural oxide film is increased in thickness, though only to a limited degree. The oxidation of Al in the presence of H₂O will, however, stop after a certain thickness is reached, as the coating is nonporous and will not allow the passage of the soln. to the metal surface. To obtain thicker coatings it is necessary, therefore, to include in the soln. compds. which will have a slight **dissolving** action on the **coating** and facilitate entry of the soln. Commercially available solns. consist of inhibited alk. solns. or weak acids such as HF, H₂SiF₆, H₂CrO₄, or H₂C₄H₄O₆. The treatment is most effective when applied to Al and its alloys with Mg, Mn, and Si. On duralumin-type and other high-Cu alloys, the coatings tend to be powdery. Effects of **compn.** on color and nature of the coating are discussed in detail. The relation between operating conditions and film growth is discussed. Methods of dyeing the coatings are described. 26 references.

IT Coating(s)
 (for aluminum and Al alloys, chem. conversion)
 IT Dyeing
 (of aluminum and Al alloys (anodized, etc.))
 IT Color(s)
 (of coatings (chem. conversion) on Al and Al alloys)
 IT Copper alloy, aluminum-
 (chem.-conversion coatings for)
 IT Duralumin, Dural
 (coatings (chem. conversion) for)
 IT Aluminum alloys
 (coatings for, chem. conversion)
 IT 7429-90-5, Aluminum
 (coatings for, chem.-conversion)

=> S L70 NOT L72
 L73 4 L70 NOT L72

=> D BIB 1-4

L73 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2003 ACS
 AN 2002:575443 HCAPLUS
 DN 137:128349
 TI Acidic etching for **removal** of **oxide films**
 and coatings from a metal substrate
 IN Kool, Lawrence Bernard; Ruud, James Anthony
 PA General Electric Company, USA
 SO U.S. Pat. Appl. Publ., 11 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002100493	A1	20020801	US 2001-771186	20010129
PRAI	US 2001-771186		20010129		

These 4 references with additional acids were printed in full with the first set of 65 answers.

L73 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2003 ACS

AN 2002:293775 HCAPLUS

DN 136:326996

TI Method for pretreating and subsequently coating metallic surfaces with a paint-type coating prior to forming and use of substrates coated in this way

IN Shimakura, Toshiaki; Bittner, Klaus; Domes, Heribert; Wietzoreck, Hardy; Jung, Christian

PA Chemteall GmbH, Germany

SO PCT Int. Appl., 115 pp.

CODEN: PIXXD2

DT Patent

LA German

FAN.CNT 6

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002031065	A2	20020418	WO 2001-EP11738	20011010
	WO 2002031065	A3	20020627		
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
	AU 2002015940	A5	20020422	AU 2002-15940	20011010
PRAI	DE 2000-10050532	A	20001011		
	DE 2001-10110830	A	20010306		
	DE 2001-10119606	A	20010421		
	WO 2001-EP11738	W	20011010		

L73 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2003 ACS

AN 2001:763349 HCAPLUS

DN 135:309344

TI System for the preferential **removal** of silicon **oxide**

IN Mueller, Brian L.; Chamberlain, Jeffrey P.; Schroeder, David J.

PA Cabot Microelectronics Corporation, USA

SO PCT Int. Appl., 20 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001078116	A2	20011018	WO 2001-US11604	20010409
	WO 2001078116	A3	20020221		
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			

EP 1272580 A2 20030108 EP 2001-926798 20010409
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
 PRAI US 2000-547425 A 20000411
 WO 2001-US11604 W 20010409

L73 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2003 ACS
 AN 1964:81381 HCAPLUS
 DN 60:81381
 OREF 60:14220f-h,14221a
 TI Cleaning and polishing aluminum and its alloys
 IN Kendall, Earl W.
 PA Rohr Corp.
 SO 9 pp.
 DT Patent
 LA Unavailable

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	US 3106499		19631008	US	19590511